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Accountants of  
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# The Chartered Accountant **STUDENT**

Your monthly guide to CA news, information and events



**RISK  
MANAGEMENT**

**INFORMATION  
TECHNOLOGY**

**BUSINESS AND  
COMMERCIAL KNOWLEDGE**

**BUDGET 2020  
HIGHLIGHTS**

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## INSIDE

03 President's Communication

04 Vice-President's Communication

05 Chairman's Communication

06 Announcement

07 CA Final: Risk Management

15 CA Intermediate: Information Technology

27 CA Foundation: Business and Commercial Knowledge

28 News Update

29 Budget 2020 Highlights

35 Glimpses

36 Crossword

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**SWACHH BHARAT - A STEP TOWARDS CLEANLINESS**

## PRESIDENT'S COMMUNICATION



My Dear Students,

**W**arm Greetings to all of you! It is an absolute pleasure to communicate with you as the President of this premier institute, which ranks amongst the best and holds the coveted position of being the second largest accounting body in the world. With an internationally benchmarked scheme of Education and Training and a world-class robust system of examination, ICAI stands tall amongst the best accounting institutions worldwide.

At the outset, I would like to express my heartfelt gratitude to the ICAI Council and the CA fraternity for entrusting me with a profound responsibility of serving my alma mater in the best interest of our stakeholders, our students, members, and the profession. With your active participation and unfeigned support, we shall together add a new chapter in the growth story of our beloved institute.

We, as council, assure you to continue the good work initiated by my predecessors and to make further efforts for the growth of the accounting profession so that it achieves greater heights in the dynamic global environment, thus, enhancing its public image, value, and respect in the society.

### Our Priority: Nurturing Skills by Recalibrating Education and Training

We at ICAI are committed to develop and nurture the best talent in the profession by inculcating a strong work ethics through facilitating best learning resources, infrastructure, services, and opportunities to enable our students to realize their dream and leverage professional opportunities globally. Some of the upcoming endeavors that we intend to take forward/implement are:

- Strengthen the case study based evaluation in Examination to develop analytical competence and strategic approach.
- Conceptualizing a structured framework to motivate students to learn beyond the curriculum and acquire/develop vital skillsets and technical acumen.
- Concept-based learning through multidisciplinary case studies to instill critical thinking skills.
- Launch Mentor's training programme 'Saarathi' to provide guidance to develop next-generation accountants and leaders.
- Conducting a policy review of industrial training and forging synergy with industry to promote the same amongst students.
- Implementing E-Diary collaborating with skillset grid and mentorship programme for improving the efficacy of articleship training.
- Converting ITT centres into Forensic and Analytics labs to inculcate the forensic audit skills among students in the era of digital disruption to assist in benchmarking of assurance services.

- Forming a Quality Review Group to evaluate the study material on a continuous basis for quality and excellence.

### Building a Proactive institution by Harnessing Technology

Technology is at the core of everything we do and you can see digitization everywhere. We at ICAI like to harness the power of technology for all our knowledge delivery and service efforts. Some initiatives that have been planned include:

- Promoting e-Governance by providing E-Lockers to our members and students and issuing digital documents.
- Establishing a Call-Centre at the national level to provide timely information and redressal of our members and students.
- Taking necessary measures to move towards 100% digital evaluation in the examination.
- Integrating all ICAI portals and services under an ERP environment for optimum operational efficiency.

### Developing New Avenues

The world is changing so fast and India is now the fifth-largest economy of the world. We are a force to be reckoned not only in terms of our economy but also for technical expertise and research. Our members are spreading their wings all over the world and making a global impact. Here are some moves we have planned:

- Encouraging research and academic pursuits by partnering with reputed national and international universities for doctoral programmes.
- Positioning our CA qualification as a globally recognized course to attract academic and career opportunities for young members across the globe.
- Enhancing employability and promoting job creation for students through Skill India Programmes.
- Establishing a Directorate for Placements to provide global career opportunities for young and experienced members.
- Reviewing the policy regulations for articleship training to improve its efficacy to produce versatile professionals.
- Intensifying the scholarship policy to support meritorious and needy students.

As a professional institution, we would endeavor to provide ample exposure, in terms of knowledge sharing, training and placement opportunities for our young and experienced chartered accountants by engaging with major national and international business entities, finance, and regulatory authorities.

The current issue includes comprehensive capsules based on **Business and Commercial Knowledge for CA Foundation, Enterprise Information Systems for CA Intermediate (IPC) and Risk Management for CA Final**. I urge you to refer to these to refresh and revise your subject knowledge.

I am quite hopeful that our continual endeavors and initiatives towards strengthening the system and delivery of education, training, and services, will benefit hugely to be instrumental in empowering you to become accomplished professionals.

*The future belongs to the competent; get better and better till you become the best!*

Best Wishes to you and your family for a cheerful Holi!



**CA. ATUL K. GUPTA**  
PRESIDENT, ICAI, NEW DELHI

Profile of President, ICAI can be viewed at

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## VICE PRESIDENT'S COMMUNICATION ||



Dear Students,

It gives me immense pleasure to communicate as the new Vice-President of our august Institute through the medium of The Chartered Accountant, Students' Journal. I would like to take this opportunity to express my heartfelt thanks and gratitude to the Council of ICAI for considering me worthy to shoulder this responsibility to work for the overall benefit of the Institute and its student fraternity. It would be my endeavour to closely work under the guidance of **President CA. Atul Kumar Gupta** with other council colleagues as collective team. I think that the present role is much wider and bigger in terms of responsibilities. I pray to the Almighty, to give me enough strength to work with dedication and integrity and take the Institute higher on its virtuous path. With great humility, I wish to discharge this responsibility and work for the benefit of the students, members, profession of chartered accountancy and society.

Enhancing knowledge on a continual basis is imperative, as it gives you a perspective for academic as well as professional growth. Strive to not only acquire knowledge but also share it by exchanging opinions through discussions and debates. This fosters collaborative learning, making each one of you realize your skill gaps. Self-realization exhorts you to make concerted efforts towards self-development by acquiring new skills, making you a better student/learner in the process.

You must understand that mere subject specific knowledge will not suffice; you need to keep abreast with the current business developments, discuss them with your peers and teachers in an attempt to understand the business environment. You must realize that any development big or small in economy, industry or policy either local or global, influences the profession. The year 2019 was a difficult year for the global economy with world output growth estimated to grow at its slowest pace of 2.9 per cent since the global financial crisis of 2009, declining from a subdued 3.6 per cent in 2018 and 3.8 per cent in 2017. A weak environment for global

manufacturing, trade, and demand adversely impacted the Indian economy. In 2020-21, India's GDP growth rate is expected to be in the range of 6.0%-6.5%.

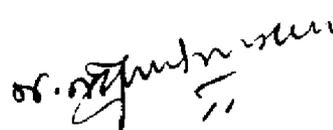
The Students are the key concern of the Institute and it is our endeavour to provide them the best infrastructure, educational opportunities and exposure that would sharpen their skills and mould them into excellent professionals. CA course is at par excellence with other professional courses. The CA Profession is very dynamic, demanding and rewarding. The profession is growing on stupendous scale and it has stretched its value-added services in the wide spectrum. The Chartered Accountants play a very vital role in the society promoting reliable and transparent information both in the public and private domain. Chartered Accountants are not delimited to performing mere traditional duties in the realm of Auditing, accounting, taxation, etc. They are now expected to have a greater understanding of and exposure in the fields of business finance, information technology, corporate governance, etc. Students need not worry about disruption caused by the A, B, C, D of Information Technology, i.e., Artificial Intelligence, Block Chain Technology, Cyber Security and Data Analytics. In fact, we will explore new opportunities from these advancements in technology. Hence, the opportunities for the accounting professionals are vast and wide.

The Chartered Accountant Professionals are capable to think, plan, and work towards their future. They can set goals and work on them. They do not always have to take what has been dealt to them; they have the capability to alter and change their destiny and make their world a more beautiful place for themselves and everyone else too. They have the power to conceive an idea in their mind's eye and work to attain it. As more and more students decide to pursue CA as their profession, it is our utmost responsibility to provide them an easy access to the best education possible. I extend my best wishes to all the aspirants of CA Course and do hope that they will achieve grand success in their set objective.

*"All knowledge that the world has ever received comes from the mind; the infinite library of the universe is in your own mind."*

- Swami Vivekananda

Wishing you and your family a very wonderful and cheerful Holi festival.



**CA. NIHAR NIRANJANI JAMBUSARIA**  
VICE PRESIDENT, ICAI, NEW DELHI

Profile of Vice President, ICAI can be viewed at [https://www.icai.org/new\\_post.html?post\\_id=192&c\\_id=199](https://www.icai.org/new_post.html?post_id=192&c_id=199)



**My Dear Students,**

I am pleased to communicate with you as the Chairman, Board of Studies. At the outset, I would like to express my gratitude to the President and all my council colleagues for having reposed their faith in me, entrusting me with the responsibility of one of the most prestigious committees of the institute- Board of Studies. I am confident that under the enterprising, zestful and motivating leadership of **President CA. Atul Kumar Gupta** and **Vice-President CA. Nihar Niranjan Jambusaria**, I shall duly carry out my responsibilities with utmost sincerity and allegiance to this noble profession. With the active support and wholehearted cooperation of my comrade **Vice-Chairman CA. Sushil Kumar Goyal** and able members and staff of Board of Studies, we will implement many initiatives and services in the best interest of our stakeholders, you our students.

Being students of this highly coveted profession, you would know that there are ample opportunities for competent Chartered Accountants across all the sectors, be it manufacturing, services, finance, consulting including research and mainstream accounting education. The Board of Studies, your mentor, your guide, has always been at the forefront, by facilitating best learning resources, systems, services and infrastructure for effective learning.

The BoS has always been mindful of your needs in context of knowledge creation and enrichment through BOS publications viz. the updated **Study Materials, Revision Test Papers** that define the scope of syllabus and outline the kind of questions expected in the exams. Our monthly publication '**The Chartered Accountant Student**' comprises regular features such as Subject Capsules for quick revision, Academic & News Updates to apprise you about the changes in the syllabus and the current business environment, policy and regulations. **e-Books** with annotations and random access facilities have also been implemented lately for CA Foundation and Intermediate, to be made available shortly for CA Final, facilitating complete agility and mobility in learning. Knowledge delivery is affected through **Live virtual classes** that offer lectures rendered by subject experts at highly affordable fee structure and **Webcasts** for CA Intermediate and Final on relevant topics such as GST, RERA, FEMA etc.

Many student support initiatives have been initiated.

Apart from the **Article assistance portal** for those of you looking for training opportunities in firms and industries, **Student Activity Portal** has been implemented wherein you can register online for various BOS events. **Toll-free helpline** for timely grievance redressal is running successfully. We have indeed come a long way from a completely **Distance Learning course to a Distance Serving Course**.

As many as 158 ITT centers have been revamped by installing computers with latest software and hardware. Biometric attendance device has been installed at 18 POUs.

This issue comprises summarized capsules based on **Business and Commercial Knowledge for CA Foundation, Enterprise Information Systems for CA Intermediate (IPC) and Risk Management for CA Final**. You must refer to these to revise important topics in the designated subjects.

The CA course requires utmost dedication, persistent efforts, positive bent of mind and above all a sound strategy devised to leverage your strengths and overcome your shortcomings. You will have to adopt a multipronged approach to enrich your subject specific knowledge, as well as keep yourself abreast with the latest business news. You must take articleship training most seriously as this will help you to cultivate skills like communication, articulation, presentation, teamwork and prepares you to make a smooth transition into professional life. The hands-on experience that you get during articleship is a major differentiating factor making you stand apart from your peers. It is also important that you strike a balance between articleship and studies. Time Management is crucial, as you have to make time for both. Careful planning and its judicious execution will help you to optimally utilize your time. I urge you to utilize the facilities provided by the BoS to the optimum and earnestly attend training programs such as ICITSS and AICITSS. You should also enthusiastically participate in the extracurricular activities and events such as quizzes, conferences and competitions organized by the BOS to hone your presentation skills.

We have to work together to create a synergistic learning environment that fosters holistic development through simultaneous and gradual enhancements in knowledge and skills. This would require you to be active by providing your valuable feedback on various procedures, initiatives and services so that we can make necessary changes and improvements to provide you with the best learning facilities and infrastructure. I hope that with your active participation, we at BOS will be able to bring many more key initiatives and implement measures towards your larger interest. I look forward to working for you all for the betterment of our profession.

**CA. (DR.) DEBASHIS MITRA**  
CHAIRMAN, BOARD OF STUDIES (ACADEMIC), ICAI

Profile of Chairman, Board of Studies (Academic), ICAI can be viewed at [https://www.icai.org/post.html?post\\_id=15469](https://www.icai.org/post.html?post_id=15469)



**CA. SUSHIL KUMAR GOYAL**  
Kolkata

**VICE CHAIRMAN, BOARD OF STUDIES (ACADEMIC), ICAI**

Profile of Vice Chairman, Board of Studies (Academic), ICAI can be viewed at

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**SCHOLARSHIPS FOR CA STUDENTS**

Board of Studies, ICAI invites applications for the award of Scholarships to the selected candidates to be paid from April 1, 2020 onwards under following categories:

Sr. No.	Scholarship Category	No. of Scholarships	Amount (p.m.)	Eligibility Criteria
1.	Merit-cum-Need	As per eligibility criteria	₹ 1500/-	Rank holders (other than covered under Merit category) of Intermediate (IPC)/ Intermediate Course November, 2019 Exam whose parents/guardians total annual income does not exceed ₹ 2,50,000/-
2.	Need Based and Weaker Sections	300	₹ 1250/-	Students of Intermediate (IPC)/Intermediate Course, whose parents/guardians total annual income does not exceed ₹ 2,00,000/-
		200	₹ 1250/-	Students of Final Course ( <b>Both Groups of Intermediate passed only</b> ), whose parents/guardians total annual income does not exceed ₹ 2,00,000/-
		As per eligibility criteria	₹ 1250/-	The children undergoing Intermediate (IPC)/Intermediate or Final Course of the deceased members of ICAI where financial assistance is provided to spouses of the deceased members from the Chartered Accountants Benevolent Fund (CABF) shall also be eligible for scholarship.
3.	Sri Dhanraj Kanhaiyalal Dudheria Scholarships	4	₹ 1250/-	Students of Intermediate (IPC)/Intermediate/Final from Karnataka State under Need Based & Weaker Sections criteria
4.	R.K. Khanna Memorial Scholarships	2	₹ 1250/-	Students of Intermediate (IPC)/Intermediate/Final under Need Based & Weaker Sections criteria
5.	J.S. Lodha Memorial Scholarships	2	₹ 1250/-	Students of Intermediate (IPC)/Intermediate/Final under Need Based & Weaker Sections criteria
6.	J.M. Sethia Charitable Trust Scholarships	2	₹ 1250/-	Students of Intermediate (IPC)/Intermediate/Final under Need Based & Weaker Sections criteria
7.	BCCO Foundation Scholarships	2	₹ 1250/-	Students of Intermediate (IPC)/Intermediate/Final under Need Based & Weaker Sections criteria
8.	R. P. Dalal Memorial Scholarship	2	₹ 1250/-	Students of Intermediate (IPC)/Intermediate/Final under Need Based & Weaker Sections criteria
9.	Out of Joint Corpus formed by Donors	5	₹ 1250/-	Students of Intermediate (IPC)/Intermediate/Final under Need Based & Weaker Sections criteria

Board of Studies, ICAI also awards **Merit Scholarships** to the Meritorious Students as a token of appreciation. Students whose names are appearing at Sl. No. 1-10 of Merit lists of Intermediate (IPC)/ Intermediate of November, 2019 Exam, in case the Rank at Sl. No.10 continues to Sl. No. 11 or 12 or so on, then all such rank holders shall be granted @ ₹ 2000/- p.m. Such students are not required to apply. The detailed guidelines along with the requisite application forms (Form no. 3 & 4) are available on the Institute's Website ([www.icai.org](http://www.icai.org)) (link: [http://www.icai.org/post.html?post\\_id=6486](http://www.icai.org/post.html?post_id=6486)).

**Terms for awarding Scholarship:**

- Applicants shall be the registered students of Intermediate (IPC)/ Intermediate or Final Course.
- In the case of Intermediate (IPC)/Intermediate Students, Scholarship shall be paid for a maximum period of 18 months.
- In the case of Final students, Scholarship shall be paid for a maximum period of 30 months or balance period of their articleship, whichever is less.
- An additional amount of Rs. 100/- p.m. shall be paid to SC/ ST/ OBC students, under Need-based and Weaker Section Category on submission of certificate/ documentary proof duly attested by a gazetted officer or a member of the Institute.
- One scholarship under the Need-Based and Weaker Section Category is reserved for a Physically Challenged student.
- Income Certificate (Form No. 4) is to be submitted on the letter head of the Principal under whom the Student is undergoing Articleship (Practical Training) (Part I) / letter head of any member of ICAI in case the Student is not undergoing Articleship (Part-II). The applications without Form No. 4 will not be processed.

Duly completed and signed Application Forms in the prescribed formats as mentioned above should reach the Director, Board of Studies, The Institute of Chartered Accountants of India, ICAI Bhawan, A-29, Sector-62, Noida-201309 **latest by 31<sup>st</sup> March, 2020**. In case of any clarification, please contact the Board of Studies, Telephone Nos. 0120-3045914; email: [ajay.kumar@icai.in](mailto:ajay.kumar@icai.in)

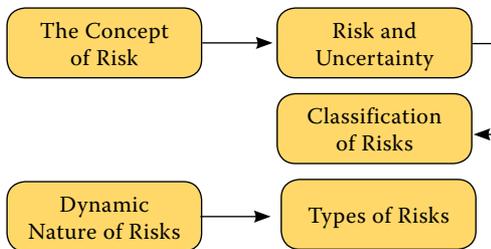
**Director, Board of Studies**

## RISK MANAGEMENT: A CAPSULE FOR QUICK REVISION

The subject “Risk Management” basically involves applying the knowledge and techniques of Risk Management to identify, measure, assess, quantify, monitor and mitigate risks in an organization. So, the Risk Management is basically a continuous process to keep identifying the risk inherent in an organization, monitoring it and taking steps to treat and mitigate it, wherever required. In this regard, an attempt has been made to convey the concepts of Risk Management to the students in a lucid and simple manner in the form of capsules.

### CHAPTER 1: INTRODUCTION TO RISK

#### Chapter Overview



#### Introduction

Risk derives from the early Italian word “risco” which means danger or “risicare,” which means “to dare” or French word “risqué.” Risk is a choice rather than a fate. The actions companies dare to take are central to our definition of risk. Risk and reward are two sides of the same coin. Risk leaders choose their risks well. They look at external and internal risks in broad context. They integrate decisions with corporate strategy, and strike a healthy balance between risk management as an opportunity and a protection shield.

#### ICAI Guide on Risk Based Internal Auditing

**Meaning of Risks** - In a larger sense, risks are those uncertainties of outcome, whether an opportunity or threat, arising out of actions and events. While looking at them narrowly, risks are those uncertainties which impede the achievement of the objective.

**Business Risk** - Business risks impede the achievement of the organisation's goals and objectives.

**SA 315 of ICAI** defines the term **Significant risk** in the context of auditing as – An identified and assessed risk of material misstatement that, in the auditor's judgment, requires special audit consideration.

**ICAI's Standard of Internal Audit** - Enterprise Risk Management defines Risk as an event which can prevent, hinder, and fail to further or otherwise obstruct the enterprise in achieving its objectives. A business risk is the threat that an event or action will adversely affect an enterprise's ability to maximize stakeholder value and to achieve its business objectives.

**SA 315 of ICAI** defines **Business Risk** as a risk resulting from significant conditions, events, circumstances, actions or inactions that could adversely affect an entity's ability to achieve its objectives and execute its strategies, or from the setting of inappropriate objectives and strategies.

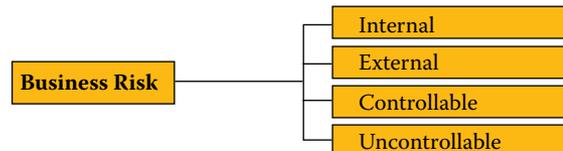
#### Occupational Health & Safety Advisory Services (OHSAS)

Occupational Health & Safety Advisory Services (OHSAS) defines risk as the combination of the probability of a hazard resulting in an adverse event, and the severity of the event.

#### Illustrative Corporate Risks

Corporate Functions	Risk Areas
Human Resources	Poor morale & talent retention
Sales & Marketing	Poor Customer loyalty & retention
Operations	Inability to Digitize/ automate processes
Treasury	Low return on investments
Information Technology	Hacking and unauthorized access
New Product development	Product failure
Treasury	Mismatch in cash flows
Finance & Accounts	Unreliable financial statements

#### Classification of Business Risk



#### Business Risks: Internal and External

**Internal risks** arise from events taking place within the business enterprise. Such risks arise during the ordinary course of a business. These risks can be forecasted and the probability of their occurrence can be determined. Hence, they can be controlled by the management significantly.

**External risks** arise due to events occurring outside the business organisation. Such events are generally beyond the control of the management. Hence, determining the likelihood of the resulting risks cannot be done with accuracy.

#### Business Risks: Controllable and Non-controllable

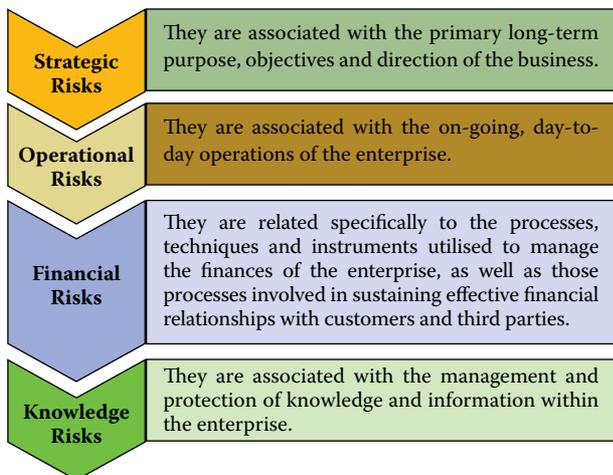
**Controllable risks** arise from the events taking place within the business enterprise. Such risks arise during the ordinary course of business. These risks can be forecasted and the probability of their occurrence can be determined.

**Uncontrollable risks** however, are those that would have a detrimental financial impact but cannot be controlled. Some uncontrollable risks that are common to many businesses include - Recessionary economy, new competitor locating nearby, and new technology.

# RISK MANAGEMENT

## ICAI's Standard of Internal Audit

Risk may be broadly classified into Strategic, Operational, Financial and Knowledge.



## Open Group Standard

The Open Group suggests classifying risks with respect to effect and frequency in accordance with scales used within the organization. There are no hard and fast rules with respect to measuring effect and frequency.

**Effect could be assessed using the following criteria as an example:**

- **Catastrophic** infers critical financial loss that could result in bankruptcy of the organization.
- **Critical** infers serious financial loss in more than one line of business leading to a loss in productivity and no return on investment.
- **Marginal** infers a minor financial loss in a line of business and a reduced return on investment.
- **Negligible** infers a minimal impact on a line of business' ability to deliver services and/or products.

**Frequency could be indicated as follows:**

- **Frequent:** Likely to occur very often and/or continuously.
- **Likely:** Occurs several times over the course of a transformation cycle.
- **Occasional:** Occurs sporadically.
- **Seldom:** Remotely possible and would probably occur not more than once in the course of a transformation cycle.
- **Unlikely:** Will probably not occur during the course of a transformation cycle.

**Potential scheme to assess corporate impact could be as follows:**

- **Extremely High Risk (E):** The transformation effort will most likely fail with severe consequences.
- **High Risk (H):** Significant failure of parts of the transformation effort resulting in certain goals not being achieved.
- **Moderate Risk (M):** Noticeable failure of parts of the transformation effort threatening the success of certain goals.
- **Low Risk (L):** Certain goals will not be wholly successful.

## The ICAI Guide on Risk Based Internal Audit

All risks have two attributes, viz.

- Likelihood of risk occurrence.
- Risk consequence.

**Measurement of the likelihood of risk** is normally against five levels on a scale of 5, viz.

- Remote (score 1).
- Unlikely (score 2).

- Possible (score 3).
- Likely (score 4).
- Almost certain (score 5).

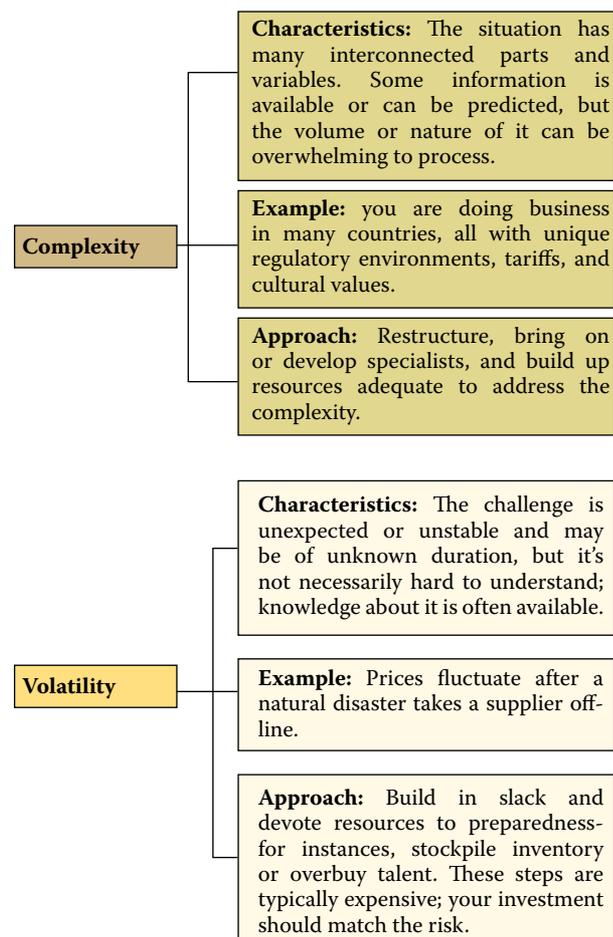
**Risk consequences** can also be against five levels on a scale of 5, viz.

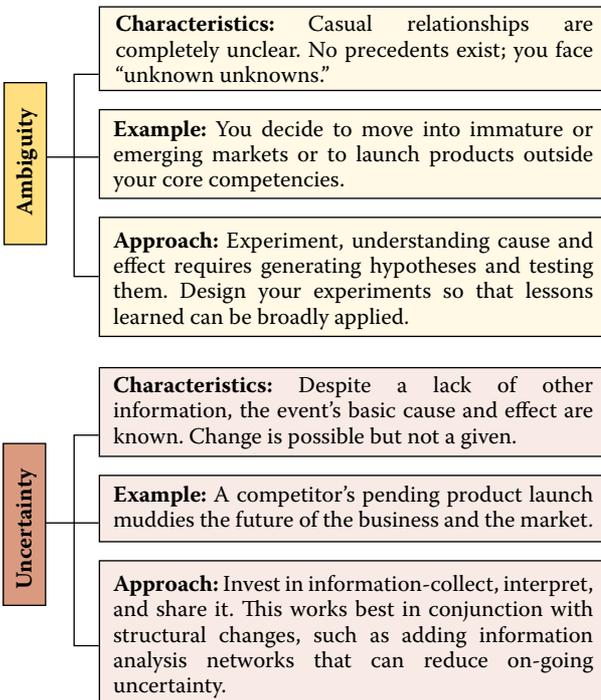
- Insignificant (score 1).
- Minor (score 2).
- Moderate (score 3).
- Major (score 4).
- Catastrophic (score 5).

## Difference between Risk & Uncertainty

Uncertainty	Risk
The lack of complete certainty, that is, the existence of more than one possibility. The "true" outcome/state/result/value is not known.	A state of uncertainty where some of the possibilities involve a loss, catastrophe, or other undesirable outcome.
<b>Measurement of uncertainty:</b> A set of probabilities assigned to a set of possibilities.	<b>Measurement of risk:</b> A set of possibilities each with quantified probabilities and quantified losses.
<b>Example:</b> "There is a 60% chance this market will double in five years".	<b>Example:</b> "There is a 40% chance the proposed oil well will be dry with a loss of \$12 million in exploratory drilling costs".

## Complexity, Volatility, Ambiguity and Uncertainty





## Categorization of Risks

**Pure Risks** are associated with uncertainties which may cause loss. In a pure risk situation, a loss occurs or no loss occurs – there is no possibility for gain. These uncertainties may be due to perils such as fire, floods, etc. or may arise from human action such as theft, accident etc.

**Control risks** are associated with unknown and unexpected events. They are sometimes referred to as uncertainty risks and they can be extremely difficult to quantify. Control risks are often associated with project management.

**Speculative Risks** have three possible outcomes: loss, no loss or gain. Examples of such risks include the decision to invest in some shares etc. The statistical techniques used in insurance cannot be applied to speculative risks. Further, these risks are deliberately taken with the hope of gain.

## Internal and External factors of Risks

Internal Factors	External Factors
<b>Controllable</b> <ul style="list-style-type: none"> <li>■ Stability and financial position of the entity</li> <li>■ Labour strikes</li> <li>■ Machine failure</li> <li>■ Staff morale</li> </ul> <b>Uncontrollable</b> <ul style="list-style-type: none"> <li>■ Accidents</li> <li>■ Attrition of people</li> <li>■ Technological change</li> <li>■ Frauds</li> </ul>	<b>Controllable</b> <ul style="list-style-type: none"> <li>■ Compliance with regulatory changes</li> </ul> <b>Uncontrollable</b> <ul style="list-style-type: none"> <li>■ Economic conditions</li> <li>■ Floods</li> <li>■ Earthquake</li> <li>■ Market/environment</li> </ul>

## Type of Risks- Illustrative

- **Financial risk** - These risks are associated with the financial assets, structure and transactions of the particular industry.
- **Credit risk** - The risk of loss arising from outright default due to the inability or unwillingness of the customer or counterparty to meet their commitments. Credit risk is the probability of loss from a credit transaction. It is also called as default risk.
- **Liquidity risk** - It arises whenever the bank is unable to generate cash to meet out its liability payment obligations or increase in assets or its failure to manage the unplanned decreases or changes in the funding sources.
- **Market risk** - The risk of losses caused by adverse changes in the market variables such as interest rate, Foreign Exchange rate, equity price and commodity price.
- **Operational Risk**- The risk associated with the operations of an organization. It is the risk of loss resulting from failure of people employed in the organization, internal process, systems or external factors acting upon it to the detriment of the organization.
- **Strategic Risk** - The current and prospective impact on earnings, capital, reputation or good standing of an organization arising from its poor business decisions, improper implementation of decisions or lack of response to industry, economic or technological changes. Failure of strategies will adversely impact the business objectives and attainment of the goals.
- **Compliance Risk** – It includes material financial loss or loss of reputation which may occur as a result of its failure to comply with the laws includes regulations, rules, related self-regulatory organization, standards and code of conduct applicable to its business activities.
- **Regulatory Risk** - Regulatory Risk arises due to changes made in policies and procedures by the regulators viz, RBI, Central and State Governments, SEBI, IRDA, etc.
- **Reputation risk** – Adverse publicity regarding an entity's practices will lead to a loss of revenue or litigation. Any event which affects the name or brand image of the entity is Reputation Risk.
- **Legal risk** - Arises from the uncertainty due to legal actions or uncertainty in the application, interpretation of contracts, laws or regulations. Legal risk is the risk arising from failure to comply with statutory or legal requirements.
- **Management risk** – It means the risks associated with ineffective, destructive or underperforming management, which hurts shareholders and the company or fund being managed.
- **Foreign exchange risk** – Risk of loss that the entity may suffer on account of adverse fluctuations in the exchange rate movements in currencies.
- **Interest rate risk** – Risk where changes in the market interest rates might adversely affect the Net interest Income earnings. It is the threat that interest paid may be more than the interest collected resulting in financial loss.
- **Staffing risk** – Risk of not employing the right person for the right job. Poorly drafted job descriptions, inadequate background verifications and inexperienced personnel contribute to staffing risk.
- **Technology risk** – Risk of not keeping pace with the fast changing technologies for business operations. Usage of out-dated technologies could impact the business operations adversely thereby resulting in loss of reputation, market share, customers, etc.
- **Business continuity risk** – Risk arising from inability to restore operations immediately in the event of an incident / disaster.
- **Information (data security) risk** – Risk of unauthorized access to data. Poor access controls both at the network level and application level give rise to this risk.

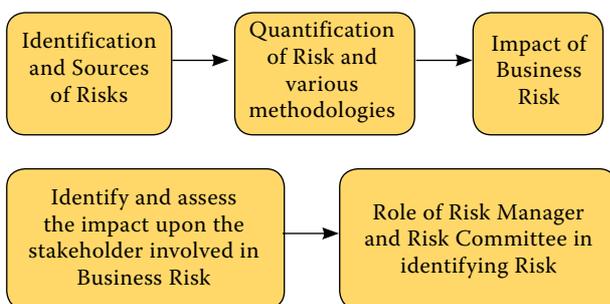
# RISK MANAGEMENT

- **Country risk** – Helps to address the issues of identifying, measuring, monitoring and controlling country exposure risks.
- **Fraud risk** – Risk of control failures, management override and deliberate acts of omission and commission that lead to financial losses.
- **Price risk** - Probability of loss occurring from adverse movement in the market price of an asset.
- **Process risk** – Inability of the management to meet its process related objectives on account of failed activities in a business process. It is a risk of loss resulting from failure of internal processes, people and systems or from external events.

- **Security Risk** - A person or situation which poses a possible threat to the security of something. Also, security arrangements risk means risk which arises from vulnerability of security systems.
- **Governance risk** - Refers to in-effective, un-ethical management of a company by its executives and managerial levels.
- **Safety risks** - These are the most common and will be present in most workplaces at one time or the other. They include unsafe conditions that can cause injury, illness and death.

## CHAPTER 2: SOURCE AND EVALUATION OF RISKS

### Chapter Overview



### Identification and Sources of Risk

#### Risk Identification

**Meaning** – It is the action or process of identifying some potential internal or external event, or threat or vulnerability or a fact that could cause damage to the entity or prevent it from achieving its objectives.

**Inclusion** - It includes documenting the potential risks in the form of a risk questionnaire or risk register and communicating the risks to the executive management.

**Effectiveness** - Risk identification is effective when the risk management team understands the business, industry or sector in which the business operates and the key management objectives or key performance indicators. Further, the risk management team should undertake a Strength, Weakness, Opportunity and Threat assessment exercise so as to document the factors that could give rise to potential risks in future.

### Participants in the Risk Identification Process

- Business managers
- Project team
- Risk management team
- Subject matter experts
- Customers
- End users
- Other project managers, stakeholders, and
- Outside experts

### Business Functions Assessment from Risk Perspective

Generally, business functions that can be assessed from a risk perspective as follows:

**Strategic** – These include business model risk factors in terms of product demand factors, availability of supply chain inputs at competitive rates, innovation, competition, financial stability and capital access, etc.

**Operational** – These include process execution and day-to-day issues that the entity is exposed to.

**Financial** – These concern the effective management and control of the finances of the organization and the effects of external factors such as availability of credit, working capital, foreign exchange rates, interest rate movement and other market exposures.

**Knowledge management** – Factors contributing to knowledge risks include the unauthorised use or abuse of intellectual property/competitive technology. Internal factors may include loss of key staff.

**Compliance management** – To manage compliances effectively entities undertake a detailed compliance risk assessment exercise wherein each applicable law is mapped for specific compliance obligation and the mitigating compliance action plan against it is documented.

## Quantification of Risk and Various Methodologies

### Risk assessment

The determination of quantitative or qualitative estimate of risk consequence related to a scenario or situation and an identified threat or hazard.

### Risk Measurement

Once risks have been identified, they are assessed and measured in order to determine their probability of occurrence, costs, opportunity, social and eventual impact on the entity's profitability and capital.

### Risk quantification

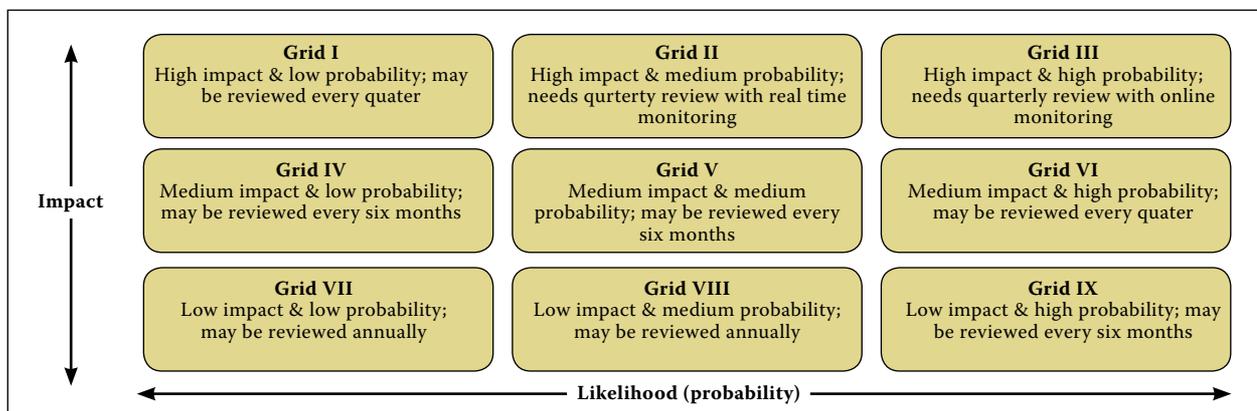
The process of evaluating and defining the cost and benefits associated with the risk consequences.

## Qualitative Risk Assessment

Risk Probability and Impact assessment generally finds answers to the following questions –

- What is the probability that a risk will occur?
- What will it cost the business if it does happen?
- The Probability and Impact Matrix indicates which risks need to be managed.

## Risk Impact Matrix



## Tools and Techniques for Risk Quantification

### Judgment and intuition

In many situations, the management and auditors have to use their judgment and intuition for risk assessment.

### The Delphi approach

A method for structuring a group communication process so that the process is effective in allowing a group of individuals as a whole to deal with a complex problem.

### Scoring

First the risks in the business, system and their respective exposures are listed, and weights assigned then product of the risk weight with the exposure weight of every characteristic is computed. The sum of these weighted score gives us the risk and exposure score of the system. System risk is then ranked according to the scores obtained.

### Quantitative techniques

These techniques involve the calculation of an annual loss exposure value based on the probability of the event and the exposure in terms of estimated costs.

### Qualitative techniques

These techniques are most widely used approaches to risk analysis. Probability data is not required and only estimated potential loss is used.

### Expected monetary value

It is the product of two numbers Risk event probability--an estimate of the probability that a given risk event will occur and Risk event value--an estimate of the gain or loss that will be incurred if the risk event does occur.

### Simulation

Simulation ties together sensitivities and probability distributions.

### Decision Tree

It is a diagram that depicts key interactions among decisions and associated chance events as they are understood by the decision maker.

### Expert Judgement

It can often be applied in lieu of or in addition to the mathematical techniques described above.

### Frequency of Loss

It measures the number of times losses occur during a particular period of time.

### Scenario Analysis

It is extension of Sensitivity Analysis where only one variable at a time is analyzed. Here, we could see the combined effects of changes in more than one variable.

# RISK MANAGEMENT ||

## Risk Identification and Assessment Approaches

Some of the important techniques of risk identification are detailed hereunder:

### Analysis of processes

Under this technique, material or significant business processes are flow charted.

### Brainstorming

Under brainstorming a group of employees put forward their ideas or sensation of risk.

### Questionnaires & Interviews

Focused on detecting the concerns of staff with respect to the risks or threats that they perceive in their operating environment.

### Checklists

These are information aids to reduce the likelihood of failures from potential hazards, risks or controls that have been developed usually from past experience, either as a result of a previous risk assessment or as a result of past failures or incidents or history or industry learning.

### “What-if” Technique (WIFT)

This is a structured, team exercise, where the expert facilitator utilizes a set of “indicators” or “hints” to stimulate participants to identify risks.

### Fault Tree Analysis (FTA)

This method is similar to a form of creative thinking called reverse brainstorming. This technique is used for identifying and analyzing factors that can contribute to a specified undesired event (called the “top event”).

### Bow Tie Analysis

Bow tie analysis is a diagrammatic way of describing, linking and analyzing the pathways of a risk from causes to effects/consequences.

### Direct Observations

This relatively simple technique and is used daily in the workplace by staff who may observe risky situations and hazards regularly.

### Incident Analysis

Recording incidents (that has already happened) in a register, conducting root cause analysis and periodically running some trend analysis reports to analyze incidents, which can potentially enable identification of new risks.

### Surveys

It is similar to structured interviews but involves a larger number of people. It can be used to collect a broad set of ideas, thoughts and opinions across a range of areas covering risks and control effectiveness.

### Workshops

Meeting of group of employees in a comfortable atmosphere, in order to identify the risks and assess their possible impact on the company.

### Comparison with other organizations

The technique used for comparing one’s own organization with the competitors.

### Stakeholder analysis

It includes the process of identifying individuals or groups who have a vested interest in the objectives. It also involves engaging them to better understand the objective and its associated uncertainties.

### Working groups

Compact working groups can be formed that could be cross functional, to surface detailed information about the risks i.e. source, causes, consequences, stakeholder impacted, existing controls.

### Corporate knowledge

History of risks provides insight into future threats or opportunities through: -

- Experiential knowledge
- Documented knowledge
- Lessons learned

## Risk Treatment Options

Sr. No	Risk action	Description
1	Avoid	Exiting the activities giving rise to risk. Risk avoidance may involve exiting a product line, declining expansion to a new geographical market, or selling a division.
2	Reduce/ Manage	Action is taken to reduce the risk likelihood or impact, or both. This, typically, involves any of the myriad of everyday business decisions. This involves addressing the root cause of the risk factor.
3	Transfer/ Share	Reducing the risk likelihood or impact by transferring or, otherwise, sharing a portion of the risk. Common techniques include purchasing insurance cover, outsourcing activities, engaging in hedging transactions.
4	Accept	No action is taken to affect the risk likelihood or impact. This is mainly in cases where the risk implications are lower than the Company’s risk appetite levels.

## Impact of Business Risk

Sr. No	Impact Areas	Nature of Impact
1	Strategy and business objectives	Delays, change management, failure to achieve objectives
2	Financial	Direct or indirect financial loss
3	Customer	Loyalty, relationship, payment terms, attrition
4	Employee	Morale, engagement, attrition
5	Vendor/ supplier	Loyalty, relationship, payment terms, attrition
6	Compliance	Delays, penalties, offences, defaults, imprisonment
7	Reputation/ Brand equity	Loss of confidence, public exposures, litigation, etc.

## Classification of Risks on the basis of impacts

Risks can be classified on the basis of their impacts into following rating buckets:



## Analyzing the Level of Risk

To analyze risks, we need to work out the likelihood of its happening (frequency or probability) and the consequences it would have (the impact) of the risks that are identified.

A risk analysis can be presented in the form of a matrix as follows:

### Likelihood scale

Level	Likelihood	Description
4	Very likely	Happens more than once a year in the industry
3	Likely	Happens about once a year in the industry
2	Unlikely	Happens every 10 years or more in the industry
1	Very unlikely	Has only happened once in the industry

### Consequences scale

Level	Consequence	Description
4	Severe	Financial losses greater than ₹5 Crores
3	High	Financial losses between ₹1 to 5 Crores
2	Moderate	Financial losses between ₹10 Lacs to 1 Crore
1	Low	Financial losses less than ₹10 Lacs

Once the level of risks are completed, we then need to create a risk rating table by multiplying Likelihood Scale with the Consequences Scale to evaluate the risk for making a decision about its severity and ways to manage it.

### Risk rating table

Risk rating	Description	Risk Management Action
12-16	Severe	Needs immediate corrective action
8-12	High	Needs corrective action within 1 week
4-8	Moderate	Needs corrective action within 1 month
1-4	Low	Does not currently require corrective action

## Identify and Assess the Impact upon the Stakeholders Involved in Business Risk

S. No.	Stakeholders	Nature of Impact
1	Owners, Boards & Management	Failure to achieve objectives, Delays, Change management, disruption, financial losses, etc.
2	Society	Loss of confidence, health hazards, direct or indirect financial losses, disruption in life style, etc.
3	Consumer	Health, financial losses, loss of confidence, etc.
4	Employee	Life, health, morale, engagement, attrition
5	Vendor/ supplier	Loyalty, relationship, payment terms, attrition
6	Government, Regulators	Revenue loss, delays in project implementations, loss of public confidence, etc.
7	Investors	Loss of confidence, lower returns, litigation, financial losses, etc.

## Principles For Effective Implementation of Risk Management Recommended By OECD

Risk managers were often separated from management and not regarded as an essential part of implementing the company's strategy. Most important of all, boards were in a number of cases ignorant of the risk facing the company.

The aim is to ensure that risks are understood, managed and, when appropriate, communicated.

Effective implementation of risk management requires an enterprise-wide approach rather than treating each business unit individually.

The board should also review and provide guidance about the alignment of corporate strategy with risk-appetite and the internal risk management structure.

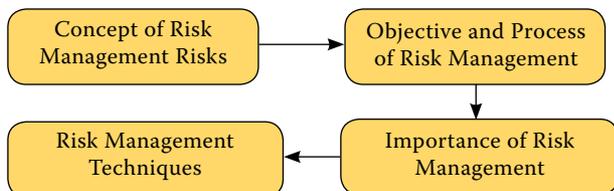
To assist the board in its work, it should also be considered good practice that risk management and control functions be independent of profit centers and the "chief risk officer" or equivalent should report directly to the board of directors along the lines.

The process of risk management and the results of risk assessments should be appropriately disclosed.

Corporate governance standard setters should be encouraged to include or improve references to risk management in order to raise awareness and improve implementation.

## CHAPTER 3: RISK MANAGEMENT

### Chapter Overview



### Concept of Risk Management

Source	Views
Warren Buffet	Risk comes from not knowing what you are doing.
Theodore Roosevelt	Risk management is about people and processes and not about models and technology.
The Risk Management Standard, The Institute of Risk Management	Risk management is a central part of any organization's strategic management. It is the process whereby organizations methodically address the risks attaching to their activities with the goal of achieving sustained benefit within each activity and across the portfolio of all activities.
Thomas S. Coleman, Practical Guide Risk Management, CFA Institute	Risk management is the art of using lessons from the past to mitigate misfortune and exploit future opportunities—in other words, the art of avoiding the stupid mistakes of yesterday while recognizing that nature can always create new ways for things to go wrong.

### Risk Attitude, Appetite, and Tolerance

**Risk Attitude** – It depends upon one's temperament such as whether a particular individual or an organization is risk-averse, risk-neutral, or risk-seeking.

**Risk tolerance** – Means how much risk an organization can tolerate or willing to withstand.

**Risk appetite** – The risk taking capacity and looks at how much risk one is willing to take.

### Risks Appetite – Principles and Approach

Risk appetite can be complex

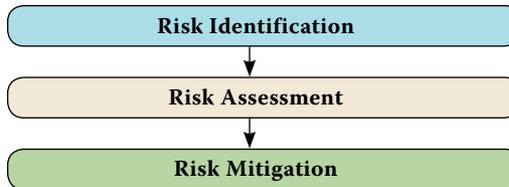
Risk appetite needs to be measurable

Risk appetite is not a single, fixed concept

Risk appetite should be developed in the context of an organization's risk management capability, which is a function of risk capacity and risk management maturity

Risk appetite must be integrated with the control culture of the organization

### Objectives of risk management



### Step by Step Process of Risk Management

Steps	Action	Principles
<b>Step 1: Identify the Risk</b>	Uncovering, recognizing and describing risks that might affect your project or its outcomes.	Risk identification – What can go wrong?
<b>Step 2: Analyze the risk.</b>	Determining the likelihood and consequence of each risk.	Risk analysis – How will it affect us?
<b>Step 3: Evaluate or Rank the Risk.</b>	Evaluating or ranking the risk by determining the risk magnitude, which is the combination of likelihood and consequence.	Risk control – What should we do?
<b>Step 4: Treat the Risk.</b>	Minimizing the probability of the negative risks as well as enhancing the opportunities by creating risk mitigation strategies, preventive plans and contingency plans.	Risk treatment – If something does happen, how will you pay for it?
<b>Step 5: Monitor and Review the risk.</b>	Reviewing the Risk Register and use it to monitor, track and update risks.	Risk Monitoring – How can we continuously look at foresight and hindsight?

### Risk Management Techniques

**Tolerate:** The exposure may be tolerable without any further action being taken.

**Transfer:** For some risks, the best response may be to transfer them. This might be done by conventional insurance or by paying a third party to take the risk.

**Terminate:** Some risks can only be treatable, or containable to acceptable levels, by terminating the activity itself.

**Treat:** By far, a large number of risks are addressed in this way. The purpose of treatment is to continue with the activity giving rise to the risk and action (internal control) is taken to contain the risk to an acceptable level.

## INFORMATION TECHNOLOGY: A CAPSULE FOR QUICK REVISION

The Capsule on IIPC(Old) Paper 7A: Information Technology incorporates Chapter 3: Telecommunication and Network, Chapter 4: Business Information Systems and Chapter 5: Business Process Automation Through Application Software. This capsule intends to assist students in their Quick revision and should not be taken as a substitute for the detailed study of these chapters. Students are advised to refer to the relevant study material and Revision Test Paper for comprehensive study and revision.

### CHAPTER 3: TELECOMMUNICATION AND NETWORK

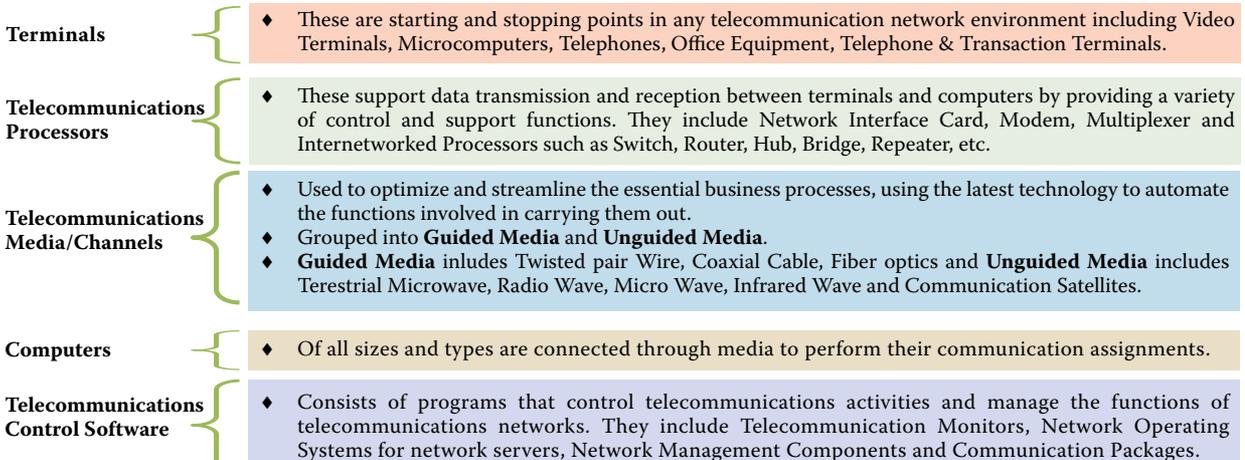
#### NETWORKING AN ENTERPRISE

Businesses are installing and extending intranets throughout their organizations to improve communications and collaboration among individuals and teams within the enterprise. Major generic components of any telecommunications network are terminals, telecommunications processors, communication channels, computers, and telecommunications s/w. Telecommunications processors include modems, multiplexers, and internetworked processors. Internet and Internet-like networks inside an enterprise are called **Intranets**, between an enterprise and its trading partners are called **Extranets**.

#### Advantages of a computer network in an organization

- |                    |                    |                                |
|--------------------|--------------------|--------------------------------|
| ◆ File Sharing     | ◆ Remote Access    | ◆ Fault Tolerance              |
| ◆ Resource Sharing | ◆ Shared Databases | ◆ Internet Access and Security |

#### TELECOMMUNICATION NETWORK MODEL



#### CLASSIFICATION OF TELECOMMUNICATION NETWORKS

##### Area Coverage Based Classification

LAN      MAN      WAN

##### Functional Based Classification

Client-Server      Peer-to-Peer      Multi-Tier

##### Ownership Based Classification

Public Network      Private Network      Virtual Private Network (VPN)

#### LOCAL AREA NETWORKS (LAN)

The **Local Area Networks** are telecommunications networks that connect information-processing devices within a limited physical area. It has following characteristics:

◆ Security	◆ Expanded PC usage through inexpensive workstation
◆ Distributed processing	◆ Electronic mail and Message Broadcasting
◆ Organizational Benefits	◆ Data management benefits

#### METROPOLITAN AREA NETWORK (MAN)

A **Metropolitan Area Network** is somewhere between a LAN and a WAN. A MAN can support both data and voice. Cable television networks are examples of MANs that distribute television signals. A MAN just has one or two cables and does not contain switching elements.

#### WIDE AREA NETWORKS (WAN)

**Wide Area Networks** are telecommunications networks that cover large geographic areas with various communication facilities such as long distance telephone service, satellite transmission, and under-sea cables. These networks cover areas such as large city or metropolitan area; Whole country or many countries and continents.

## CLIENT SERVER (C/S) NETWORK

**Client/Server network** is a computer network in which one centralized powerful computer (called Server) is connected to many less powerful PCs or workstations (called Clients). A **Client** is a single-user workstation that provides a presentation services and the appropriate computing, connectivity and the database services relevant to the business need. A **Server** is one or more multi-user processors with shared memory providing computing, connectivity and the database services and the interfaces relevant to the business need. Different types of Clients are - **Fat/Thick Client, Thin Client and Hybrid Client.**

**Prominent characteristics of C/S architecture are as follows:**

- **Service:** The server process is a provider of services and the client is a consumer of services.
- **Shared Resources:** A server can service many clients at the same time and regulate their access to the shared resources.
- **Transparency of Location:** C/S software usually masks the location of the server from the clients by redirecting the service calls when needed.
- **Mix-and-Match:** The ideal C/S software is independent of h/w or O/S software platforms.
- **Scalability:** Client workstations can either be added or removed and the server load can be distributed across multiple servers.
- **Integrity:** Server code & data are centrally managed, which results in cheaper maintenance and the guarding of shared data integrity.

**Issues in Client/Server Network are as follows:**

- When the server goes down or crashes, all the computers connected to it become unavailable to use.
- Simultaneous access to data and services by the user takes little more time for server to process the task.

## PEER TO PEER NETWORKING (P2P)

- It is created with two or more PCs connected together and share resources without going through a separate server computer.
- The prime goal of a P2P file-sharing network is that many computers come together and pool their resources to form a content distribution system. Configured computers in P2P workgroups allow sharing of files, printers across all the devices.

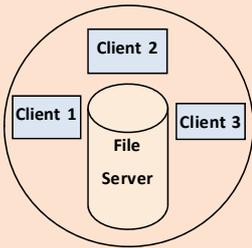
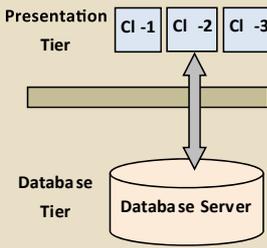
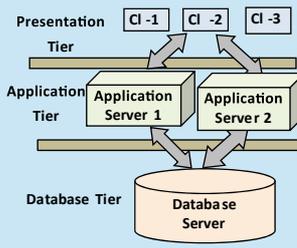
**Advantages**

- These are easy and simple to set up and only require a Hub or a Switch to connect all the computers together.
- If one computer fails, all other computers connected to it continue to work.

**Disadvantages**

- There can be problem in accessing files if computers are not connected properly.
- Does not support connections with too many computers as the performance gets degraded in case of high network size.
- The data security is very poor in this architecture.

## MULTI-TIER ARCHITECTURE

Single Tier Architecture	Two Tier Architecture	n-Tier Architecture
<p>Involves putting all the required components for a software application or technology on a single server or platform.</p>	<p>A software architecture in which a presentation layer or interface runs on a client, and a data layer or data structure gets stored on a server.</p>	<p>It is a client-server architecture in which presentation, application processing, and data management functions are logically separated.</p>
		
<p><b>Advantages</b></p> <ul style="list-style-type: none"> <li>■ This system requires only one stand-alone computer and installation of proprietary software which makes it most cost-effective system.</li> </ul>	<p><b>Advantages</b></p> <ul style="list-style-type: none"> <li>■ System performance is higher because business logic and database are physically close.</li> <li>■ More users could interact with system.</li> </ul>	<p><b>Advantages</b></p> <ul style="list-style-type: none"> <li>■ Clear separation of user-interface control &amp; data presentation from application-logic; Dynamic load balancing &amp; change management.</li> </ul>
<p><b>Disadvantages</b></p> <ul style="list-style-type: none"> <li>■ Can be used by only one user at a time.</li> <li>■ It is impractical for an organization which requires two or more users to interact with the organizational data stores at the same time.</li> </ul>	<p><b>Disadvantages</b></p> <ul style="list-style-type: none"> <li>■ Performance deteriorates if number of users increases.</li> <li>■ There is restricted flexibility and choice of DBMS, since data language used in server is proprietary to each vendor.</li> </ul>	<p><b>Disadvantages</b></p> <ul style="list-style-type: none"> <li>■ Creates an increased need for network traffic management, server load balancing, and fault tolerance.</li> <li>■ Current maintenance tools are relatively immature, inadequate and more complex.</li> </ul>

## OWNERSHIP BASED CLASSIFICATION

Public Data Network	Private Data Network	Virtual Private Networks (VPN)
<p>A network established and operated by a telecommunications administration, or a recognized private operating agency, for the specific purpose of providing data transmission services for the public.</p>	<p>Enables the ability to bring tasks that exist across multiple computers and different business departments or branches under one umbrella that is the business process itself.</p>	<p>These are overlay networks on top of public networks but with most of the properties of private networks. They are called 'virtual' because they are merely an illusion, just as virtual. It is a private network that uses a public network (usually the Internet) to connect remote sites or users together.</p>

## NETWORK COMPUTING

The growing reliance on the computer hardware, software, and data resources of the Internet, Intranets, extranets, and other networks has emphasized that for many users “the network is the computer”.

**Features of Network Computing are as follows:**

- Network computers & other thin clients provide a browser-based user-interface for processing small application programs (applets).
- These are microcomputers without floppy or hard disk drives that are designed as low-cost networking computing devices.
- Application and database servers provide the operating system, application software, applets, databases, and database management software needed by end users in network.

## MODELS OF COMPUTING

**Centralized Computing** - It is done at a central location, using terminals attached to a central computer. The computer itself may control all the peripherals directly, or they may be attached via a terminal server.

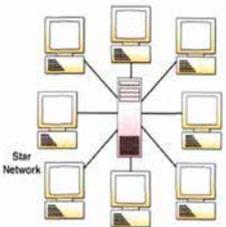
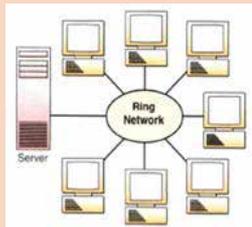
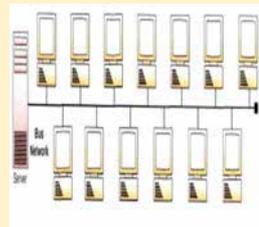
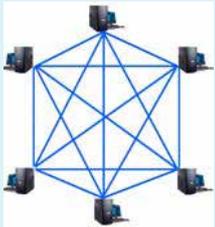
**Decentralized Computing** - Decentralized computing is the allocation of resources, both hardware and software, to each individual workstation, or office location. Decentralized systems enable file sharing and all computers can share peripherals.

**Advantages** - It offers greater security over decentralized systems because all the processing is controlled in a central location.

**Advantages** - These can run independently of each other and enable file sharing and all computers can share peripherals such as printers & scanners, allowing all the computers in the network to connect to the internet.

## NETWORK TOPOLOGY

“**Topology**” defines the physical or logical arrangement of links in a network. It is the geometric representation of the relationship of all the links and linking devices (usually called Nodes) to each other.

Star Network	Ring Network	Bus Network	Mesh Network
The central unit (server) in the network acts as the traffic controller among all the other computers tied to it.	Local computer processors are tied together sequentially in a ring with each device being connected to two other devices under a decentralized approach.	A single length of wire, cable, or optical fiber connects number of computers.	Each node is connected by a dedicated point to point link to every node.
			
A node failure does not bring down the entire network. Failure of server affects whole network.	Failure of one computer on the network can affect the whole network.	If one of the microcomputer fails, it will not affect the entire network.	If one of node fails, the network traffic can be redirected to another node.
New nodes can be added easily without affecting rest of the network.	It is considered to be inefficient as data can only travel in one route to reach its destination.	It is easy to install, easily extendable and inexpensive.	It is the best choice for fault tolerance, however, it is very difficult to setup and maintain.

### Data Transmission (The transmission of binary data across a link)

Parallel

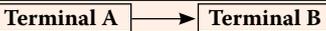
Serial

Asynchronous

Synchronous

SERIAL MODE	PARALLEL MODE
In this, the data bits are transmitted serially one after another.	In this, the data bits are transmitted simultaneously.
Data is transmitted over a single wire.	Data is transmitted over 8 different wires.
It is a cheaper mode of transferring data.	It is relatively expensive mode of transferring data.
It is useful for long distance data transmissions.	Not practical for long distance communications as it uses parallel paths, so cross talk may occur.
It is relatively slower.	It is relatively faster.

### TRANSMISSION MODE USED TO DEFINE DIRECTION OF SIGNAL FLOW BETWEEN TWO LINKED DEVICES

Simplex Connection	Half-Duplex Connection	Full Duplex Connection
Data flows in only one direction.	Data flows in one direction or the other, but not both at the same time.	Data flows in both directions simultaneously.
		
Example – Data from user’s computer to the printer.	Example – Walkie-Talkie.	Example – Mobile Phones.

# INFORMATION TECHNOLOGY

## Transmission Techniques

- Based on techniques used to transfer data, communication networks can be categorized into the following:
- ◆ **Broadcast Networks:** Data transmitted by one node is received by many, sometimes all, of the other nodes. This refers to a method of transferring a message to all recipients simultaneously.
  - ◆ **Switched Networks:** Data transferred from source to destination is routed through the switch nodes. The way in which the nodes switch data from one link to another, as it is transmitted from source to destination node, is referred to as a switching technique. Three common switching techniques are **Circuit Switching, Packet Switching and Message Switching.**

## NETWORK ARCHITECTURE

- ◆ It refers to the layout of the network consisting of the hardware, software, connectivity, communication protocols and mode of transmission, such as wired or wireless and its goal is to promote an open, simple, flexible, and efficient telecommunications environment. It includes hardware components used for communication, cabling and device types, network layout and topologies, physical and wireless connections, implemented areas and future plans.

## PROTOCOLS

- ◆ **Protocols** are software that performs a variety of actions necessary for data transmission between computers. These are a set of rules for inter-computer communication that have been agreed upon and implemented by many vendors, users and standards bodies to ensure that the information being exchanged between the two parties is received and interpreted correctly.

**The OSI Model:** The **International Standards Organization (ISO)** developed a seven-layer Open Systems Interconnection (OSI) model to serve as a standard model for network architectures.

TCP/IP	The OSI Model	Functions
Application or Process Layer	<b>Application Layer</b>	Provides communications services for end user applications.
	<b>Presentation Layer</b>	Provides appropriate data transmission formats and codes.
Host-to-Host Transport Layer	<b>Session Layer</b>	Supports the accomplishment of telecommunication sessions.
	<b>Transport Layer</b>	Supports the organization and transfer of data between nodes in the network.
<b>Internet Protocol (IP)</b>	<b>Network Layer</b>	Provides appropriate routing by establishing connections among network links.
<b>Network Interface</b>	<b>Data Link Layer</b>	Supports error-free organization and transmission of data in the network.
<b>Physical Layer</b>	<b>Physical Layer</b>	Provides physical transmission of data on the telecommunication media in the network.

## THREATS

### Unstructured Threats

- ◆ These originate mostly from inexperienced individuals using easily available hacking tools from the Internet.
- ◆ These include port-scanning tools, address-sweeping tools, and many others.

### Structured Threats

- ◆ These originate from individuals who are highly motivated and technically competent and usually understand network systems design and the vulnerabilities of those systems.

### External Threats

- ◆ These originate from individuals or organizations working outside an organization, which does not have authorized access to organization's computer systems or network.

### Internal Threats

- ◆ These threats originate from individuals who have authorized access to the network. These users either have an account on a server or physical access to the network.

## VULNERABILITY

**Vulnerability** is an inherent weakness in the design, configuration, or implementation of a network or system that renders it susceptible to a threat. The following facts are responsible for occurrence of vulnerabilities in the software:

- **Software Bugs** - Software bugs are so common that users have developed techniques to work around the consequences, and bugs that make saving work necessary every half an hour or crash the computer every so often are considered to be a normal part of computing.
- **Timing Windows** - This problem may occur when a temporary file is exploited by an intruder to gain access to the file, overwrite important data, and use the file as a gateway for advancing further into the system.
- **Insecure default configurations** - Insecure default configurations occur when vendors use known default passwords to make it as easy as possible for consumers to set up new systems.
- **Trusting Untrustworthy information** - This is a problem that affects routers, or those computers that connect one network to another.
- **End users** - Generally, users of computer systems are not professionals and are not always security conscious.

## NETWORK SECURITY

It is based on the increasing demand and expectations, the security involves four aspects: **Privacy (Confidentiality), Message Authentication, Message Integrity and Non-repudiation.**

Privacy	Authentication	Integrity	Non-Repudiation
<ul style="list-style-type: none"> <li>• This means that sender and receiver expect confidentiality. The transmitted message should make sense to only intended receiver and the message should be unintelligible to unauthorized users.</li> </ul>	<ul style="list-style-type: none"> <li>• The receiver is sure of the sender's identity and that an imposter has not sent the message.</li> </ul>	<ul style="list-style-type: none"> <li>• This means that the data must arrive at the receiver exactly as it was sent. There must not be any changes during the transmission – either accidental or malicious.</li> </ul>	<ul style="list-style-type: none"> <li>• This means that a receiver must be able to prove that a received message came from a specific sender and the sender must not be able to deny sending it.</li> </ul>

**Secure Socket Layer** - It provides a secure channel between two machines operating over the Internet or an internal network.

**SSH File Transfer Protocol** - A computing network protocol for accessing and managing files on remote file systems.

## NETWORK SECURITY PROTOCOLS

**HyperText Transfer Protocol Secure** - A protocol for secure communication over a computer network, with especially wide deployment on the Internet.

**Secure Shell (SSH)** - A program to log into another computer over a network, execute commands in a remote machine and move files from one machine to another.

## NETWORK SECURITY TECHNIQUES

These are the tools/techniques to protect information and systems against compromise, intrusion, or misuse.

**1. Intrusion Detection System (IDS):** An **Intrusion Detection System** is a device or software application that monitors network or system activities for malicious activities or policy violations and produces reports to a Management Station. Intrusion Detection System are primarily of following types: **Network Intrusion Detection (NID), Host-based Intrusion Detection (HID), and Hybrid Intrusion Detection.**

**2. Firewall:** Forms a barrier between a secure and an open environment when the latter environment is usually considered hostile.

**3. Network Access Control:** Enforces security policy by granting only security policy-compliant devices access to network assets.

**4. Anti - Malware:** It is an umbrella term used to refer to a variety of forms of hostile or intrusive software, including computer viruses, worms, trojan horses etc. and other malicious programs.

**5. Site Blocking:** It is a software-based approach that prohibits access to certain Web sites that are deemed inappropriate by management.

## NETWORK ADMINISTRATION AND MANAGEMENT

**Network Management** refers to the activities, methods, procedures, and tools that pertain to the **Operation, Administration, Maintenance, and Provisioning** of networked systems.

### Operation

Deals with keeping network and services that the network provides up and running smoothly.

### Administration

Deals with keeping track of resources in the network and how they are assigned.

### Maintenance

Concerned with performing repairs and upgrades.

### Provisioning

Concerned with configuring resources in the network to support a given service.

## E-COMMERCE / M-COMMERCE

**Electronic Commerce (e-Commerce)** is a sophisticated combination of technologies and consumer-based services integrated to form a new paradigm in business transaction processing. It refers to the use of technology to enhance the processing of commercial transactions between a company, its customers and its business partners.

**Benefits of e-Commerce Application and Implementation are as follows:**

- Reduction in costs to buyers and suppliers by electronically accessing on-line databases; errors, time, and overhead costs in information processing; time to complete business transactions; inventories and reduction of risk of obsolete inventories; overhead and advertising costs; use of ecologically damaging materials.
- Easier entry into new markets, especially geographically remote markets, for enterprises regardless of size and location.
- Optimization of resource selection as businesses form cooperative teams.

**Risks** involved in e-Commerce are Problem of anonymity, Repudiation of contract, Lack of authenticity of transactions, Data Loss or theft or duplication, Attack from hackers, Denial of Service, Non-recognition of electronic transactions, Lack of audit trails and Problem of piracy.

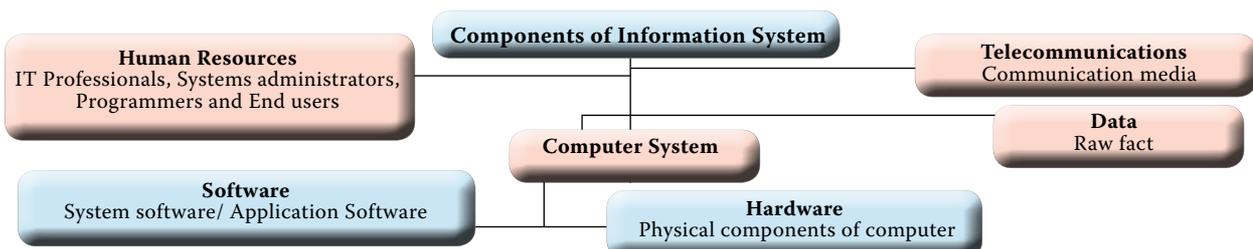
**Types of e-Commerce are as follows:**

- (a) Business-to-Business (B2B) e-Commerce (c) Consumer-to-Business (C2B) e-Commerce (e) Business-to-Government (B2G) e-Commerce  
 (b) Business-to-Consumer (B2C) e-Commerce (d) Consumer-to-Consumer (C2C) e-Commerce (f) Business-to-Employee (B2E) e-Commerce

**M-commerce (Mobile commerce)** is the buying and selling of goods and services through wireless handheld devices such as cellular telephone and personal digital assistants (PDAs), known as next-generation e-commerce; enables users to access the Internet without needing to find a place to plug in. The industries affected by m-commerce include Financial services, Telecommunications, Service/retail, etc.

## CHAPTER 4: BUSINESS INFORMATION SYSTEMS

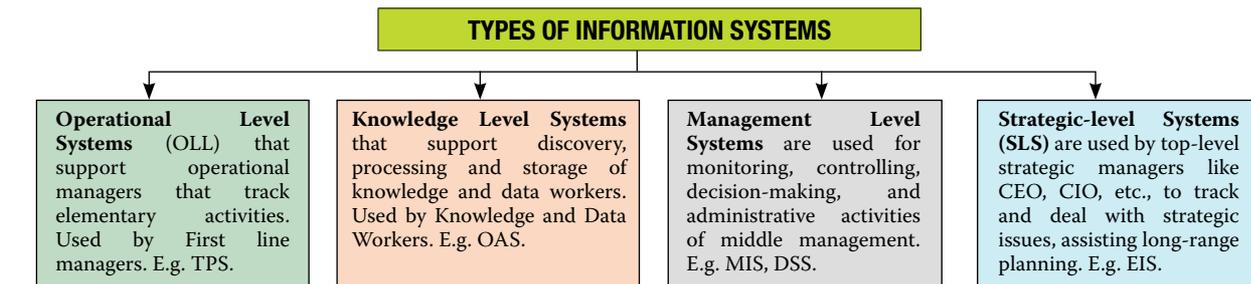
**Information System** is defined as a combination of people, hardware, software, communication devices, network and data resources that processes data and information for a specific purpose. The system needs inputs from user which will then be processed using technology devices such as computers, and produce output (printing reports, displaying results) that will be sent to another user or other system via a network and a feedback method that controls the operation.



# INFORMATION TECHNOLOGY

**Business Information System (BIS):** Defined as systems integrating information technology, people and business. BIS bring business functions and information modules together for establishing effective communication channels which are useful for making timely and accurate decisions and in turn contribute to organizational productivity and competitiveness.

**A Business Process:** It is an activity or set of activities that will accomplish a specific organization goal. Has a goal, specific inputs and outputs, several activities that are performed in some order. It uses resources, may affect more than one organisational unit and creates value of some kind for the customer.



	Introduction	TPS Cycle	TPS Attributes	Pre-requisites of ACID Test
<b>Transaction Processing System (TPS)</b>	TPS is the lowest level of OLL level system that collects, stores, modifies and retrieves the day-to-day data transactions of an enterprise. Examples are Airline Reservation Systems, Railway reservation System etc.	<ul style="list-style-type: none"> <li>• <b>Data Entry:</b> Recording/editing of data to be quickly/correctly captured for its proper processing.</li> <li>• <b>Transaction processing:</b> As Batch/Real-time processing.</li> <li>• <b>Database Maintenance:</b> Correct/up-to date.</li> <li>• <b>Document &amp; Report Generation:</b> purchase orders, pay-checks, sales receipts, invoices, and customer statements.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Access Control:</b> people who are not authorized to use the system are not permissible to influence or transform the transaction process.</li> <li>• <b>Equivalence:</b> Transactions are processed in the similar format every time to ensure that full effectiveness is achieved.</li> <li>• <b>High Volume Rapid Processing:</b> instantaneous processing of transactions is noteworthy to the success of certain industry such as banking.</li> <li>• <b>Trustworthiness:</b> designed to be robust and trustworthy.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Atomicity:</b> means that a transaction is either completed in full or not at all. TPS systems ensure that transactions take place in their entirety.</li> <li>• <b>Consistency:</b> TPS systems exist within a set of operating rules.</li> <li>• <b>Isolation:</b> Transactions must appear to take place in seclusion.</li> <li>• <b>Durability:</b> Once transactions are completed, they cannot be undone.</li> </ul>

**Office Automation Systems (OAS)** is an amalgamation of hardware, software, and other resources used to smooth the progress of communications and augment efficiency. Its basic activities include – Exchange of information; management of administrative documents; handling of numerical data; and meeting, planning and management of work schedules.

Applications	Description
<b>Word Processing</b>	Use of a computer to perform automatically many of the tasks necessary to prepare typed or printed documents.
<b>Electronic mail</b>	Use of a computer network that allows users to send, store & retrieve messages using terminals & storage devices.
<b>Voice Mail</b>	Requires computers with an ability to store audio messages digitally and convert them back upon retrieval.
<b>Video Conferencing</b>	Use of television equipment to link geographically dispersed conference participants.

**Knowledge Management Systems (KMS)** refer to any kind of IT system that stores and retrieves knowledge, improves collaboration, locates knowledge sources, mines repositories for hidden knowledge, captures and uses knowledge, or in some other way enhances the KM process. There are two broad types of knowledge—**Explicit and Tacit**.

<b>Explicit Knowledge:</b> It can be formalized easily and is easily available across the organization. It is articulated, and represented as spoken words, written material and compiled data. It is codified, easy to document, transfer and reproduce. For example – Online tutorials, Policy and procedural manuals.	<b>Tacit Knowledge:</b> It is unarticulated and represented as intuition, perspective, beliefs, and values that individuals form based on their experiences. It is personal, experimental and context specific. It is difficult to document and communicate the tacit knowledge. For example – hand-on skills, special know-how, employee experiences.
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**Management Information System (MIS)** refers to the data, equipment and computer programs that are used to develop information for managerial use.

- **Management:** Comprises the process and activity that a manager does in the operation of their organization, i.e., to plan, organize, direct and control operations.
- **Information:** Information simply means processed data or in the layman language, data which can be converted into meaningful and useful form for a specific user.
- **System:** Defined as a group of interrelated components working together towards a common goal by accepting input and producing output in an organize transformation process.
- **Some Examples of MIS** - Airline reservations (seat, booking, payment, schedules, boarding list, special needs, etc.); Bank operations (deposit, transfer, withdrawal) electronically with a distinguish payment gateways; and Integration of department with the help of contemporary software's like ERP.

**Decision Support System (DSS)** is a type of computerized information system that supports business and organizational decision – making activities. Planning languages commonly used in DSS are **General-purpose planning languages and Special-purpose planning languages**. DSS components are as follows:

<b>The user:</b> Usually a manager with an unstructured or semi-structured problem to solve at management - level of an organization.	<b>One or more databases:</b> Databases contain both routine and non-routine data from both internal and external sources.	<b>Model Base:</b> It is the brain of DSS that performs data manipulations & computations with the data provided to it by user & database. The planning language in DSS allows user to maintain a dialogue with model base.
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**Executive Information Systems (EIS)** sometimes referred to as an Executive Support System (ESS) serves the strategic level i.e. top-level managers of the organization.

Components	Description
<b>Hardware</b>	Includes Input data-entry devices, CPU, Data Storage files and Output Devices.
<b>Software</b>	Includes Text base software, Database, and Graphic types such as time series charts, scatter diagrams, maps, motion graphics, sequence charts, and comparison-oriented graphs (i.e., bar charts) Model base.
<b>User Interface</b>	Includes hardware (physical) and software (logical) components by which people (users) interact with a machine. Several types of interfaces can be available to the EIS structure, such as scheduled reports, questions/answers, menu driven, command language, natural language, and input/output.
<b>Telecommunication</b>	Involves transmitting data from one place to another in a reliable networked system.

## SPECIALISED SYSTEMS

**Customer Relationship Management (CRM)** may be defined as a business process in which client relationships; customer loyalty and brand value are built through marketing strategies & activities. It allows businesses to develop long-term relationships with established and new customers while helping modernize corporate performance, incorporates commercial and client-specific strategies via employee training, marketing planning, relationship building, etc.

### Benefits of CRM

- ◆ Generates customer loyalty, raising a market intelligence enterprise, and an integrated relationship.
- ◆ Preserves existing customers/provides enhanced services to accomplish loyalty.
- ◆ Smoothens the progress to capture, consolidate, analysis, and enterprise-wide dissemination of data from existing and potential customers.

**Supply Chain Management (SCM)** may be defined as the process of planning, implementing and controlling the operations of the supply chain with the purpose of satisfying the customer's requirement as efficiently as possible. Core Elements of SCM are as follows:

<b>DISTRIBUTION</b>	<b>INTEGRATION</b>	<b>PURCHASING</b>	<b>OPERATIONS</b>
<ul style="list-style-type: none"> <li>■ Transportation</li> <li>■ CRM</li> <li>■ Logistics Parties</li> </ul>	<ul style="list-style-type: none"> <li>■ Coordination</li> <li>■ Management</li> <li>■ Control</li> </ul>	<ul style="list-style-type: none"> <li>■ Supplier Selection</li> <li>■ Recruitment</li> <li>■ Payroll Management</li> </ul>	<ul style="list-style-type: none"> <li>■ Inventory</li> <li>■ Control</li> <li>■ Quality</li> </ul>

**Human Resource Management System** refers to the systems and processes at the intersection between Human Resource Management (HRM) and Information Technology.

- ◆ **Workforce Management** provides powerful tools to effectively manage labor rules, ensure compliance, and control labor costs and expenses.
- ◆ **Time and Attendance** module gathers standardized time and work related efforts, data collection methods, labor distribution capabilities and data analysis.
- ◆ **Payroll Management** facilitates salary, deductions, calculations, eliminates errors, free up HR staff etc.
- ◆ **Training Management** tracks the trainer or training organization, costs associated with training schedule, training locations, required supplies and equipment and registered attendees.
- ◆ **Compensation Management** requires integrating employee processes, information and programs with organizational processes and strategies to achieve optimal organizational results.
- ◆ **Recruitment Management** includes processes for managing open positions/requisitions, applicant screening, assessments, selection and hiring, correspondence, reporting and cost analysis.
- ◆ **Personnel Management** comprises of HR master-data, personnel administration, recruitment and salary administration.
- ◆ **Organizational Management** includes organizational structure, staffing schedules and job description.
- ◆ **Employee Self Service (ESS)** allows employees to query HR related data and perform some HR transactions over the system.
- ◆ **Analytics** enables organizations to extend the value of an HRMS implementation by extracting HR related data for use with other business intelligence platforms.

# INFORMATION TECHNOLOGY ||

**Core Banking Systems (CBS)** may be defined as a back-end system that processes daily banking transactions, and posts updates to accounts and other financial records. Examples of core banking products include Infosys' Finacle, Nucleus FinnOne and Oracle's Flexcube application (from their acquisition of Indian IT vendor i-flex). **Elements of CBS are as follows:**

<ul style="list-style-type: none"> <li>◆ Making and servicing loans.</li> <li>◆ Processing cash deposits and withdrawals.</li> <li>◆ Calculating interest.</li> <li>◆ Establishing criteria for minimum balances, interest rates, number of withdrawals allowed and so on.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Opening new accounts.</li> <li>◆ Processing payments and cheques.</li> <li>◆ Customer Relationship Management activities.</li> <li>◆ Establishing interest rates.</li> <li>◆ Maintaining records for all the bank's transactions.</li> </ul>
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**Accounting Information System (AIS)** is defined as a system of collection, storage and processing of financial and accounting data that is used by decision makers. **Its key components are as follows:**

<b>People</b>	AIS helps various system users that include accountants, consultants, business analysts, managers, chief financial officers and auditors etc. from different departments within a company to work together.
<b>Procedure &amp; Instructions</b>	These include both manual and automated methods for collecting, storing, retrieving and processing data.
<b>Data</b>	Refers to the information pertinent to the organization's business practices that may include sales orders, customer billing statements, sales analysis reports etc., which can then be used to prepare accounting statements and reports.
<b>Software</b>	These are the computer programs that provide quality, reliability and security to the company's financial data that may be stored, retrieved, processed and analyzed. Managers rely on the information it outputs to make decisions for the company, and they need high-quality information to make sound decisions.
<b>IT Infrastructure</b>	This include hardware such as personal computers, servers, printers, surge protectors, routers, storage media, and possibly a backup power supply used to operate the system.
<b>Internal Controls</b>	These are the security measures such as passwords or as complex as biometric identification to protect sensitive data against unauthorized computer access and to limit access to authorized users. Internal controls also protect against computer viruses, hackers and other internal and external threats to network security.

## Expert System (ES) Definition

A computerized information system that allows non-experts to make decisions comparable to those of an expert.

## Expert Systems Components

- ◆ **Knowledge Base:** Includes the data, knowledge, relationships, rules of thumb (heuristics), and decision trees used by experts to solve a particular problem.
- ◆ **Inference Engine:** Contains the logic and reasoning mechanisms that simulate the expert logic process and deliver advice.
- ◆ **User Interface:** Allows the user to design, create, update, use and communicate with ES.
- ◆ **Explanation facility:** Provides user with an explanation of the logic the ES used to arrive at its conclusion.

**Business Intelligence (BI)** is the delivery of accurate, useful information to the appropriate decision makers within the necessary time frame to support effective decision making for business processes.

**Business Intelligence Tools** are a type of software that is designed to retrieve, analyze and report data.

<b>Simple Reporting and Querying</b>	This involves using the data warehouse that provides the perfect architecture to combine all the data dispersed throughout the enterprise in different applications in a variety of formats, on a range of hardware, which could be anywhere to be cleaned up, summarized, converted and integrated into one common format and available centrally for further processing.
<b>Business Analysis</b>	Business analysis refers to presenting visualizing data in a multidimensional manner. This allows the user to plot data in row and column coordinates to further understand the intersecting points. <b>ETL (Extract, Transform, Load)</b> tools bring in data from outside sources, transform it to meet business specified operational needs, and then load the results into the company database
<b>Dashboards</b>	Are flexible tools that can be bent into as many different shapes as per user requirements. It includes a collection of graphs, reports, and KPIs that help monitor business activities as progress on a specific initiative.
<b>Scorecards</b>	This involves providing a visual representation of the enterprise strategy by taking critical metrics and mapping them to strategic goals throughout the enterprise. A scorecard has a graphical list of specific, attainable strategic milestones, combined with metrics that serve as benchmarks.
<b>Data Mining or Statistical Analysis</b>	This involves using statistical, artificial intelligence, and related techniques to mine through large volumes of data and providing knowledge without users even having to ask specific questions. The objective is to provide interesting and useful information to users by design even without their querying.

**Business Reports** are a type task which facilitates in scrutinizing a situation and pertain to business theories to fabricate a variety of suggestions for development. Business reports are routinely assigned to facilitate us to:

- Accomplish conclusions about a trouble or issue.
- Demonstrate short and apparent communication skills.
- Endow with recommendations for upcoming accomplishing.
- Exhibit our analytical, reasoning, and evaluation skills in identifying and weighing-up potential solutions and outcomes.
- Pertain business and management theory to a practical situation.
- Scrutinize obtainable and potential solutions to a problem, situation, or question.

## IMPORTANCE OF ACCESS AND PRIVILEGE CONTROLS

In order to safeguard software systems, procedures are developed and implemented for protecting them from unauthorized modification, disclosure or destruction to ensure that information remains accurate, confidential, and is available when required. Access controls help us to restrict whom and what accesses our information resources, and they possess four general functions: **Identity Verification, Authentication, Authorization and Accountability.**

**Approaches to Access Control are as follows:**

**Role-based Access Control (RBAC)** enforces static constraints based on a user's role that largely eliminates discretion when providing access to objects. RBAC, for example, enforces static constraints based on a user's role.

**Rules-based Access Control (RAC)** is largely context-based that considers the data affected, the identity attempting to perform a task, and other triggers governed by business rules.

### **Principle of Least Privilege**

This is a fundamental principle of information security, which refers to give only those privileges to a user account, which are essential to that user's work. For example, a backup user does not need to install software; hence, the backup user has rights only to run backup and backup-related applications. Any other privileges, such as installing new software, should be blocked.

## CHAPTER 5: BUSINESS PROCESS AUTOMATION THROUGH APPLICATION SOFTWARE

### BUSINESS APPLICATION

- **Business** is defined as a person's regular occupation or commercial activity, a person's concern.
- **Application**, in terms of computers, is defined as a computer program to fulfill a particular purpose.
- **Business Application** as a computer program used to fulfill a person's need for regular.

### APPLICATIONS BASED ON NATURE OF PROCESSING

Batch Processing	Online Processing	Real-Time Processing
It is defined as a processing of large set of data in a specific way, automatically, without needing any user intervention. The data is first collected, during a work day, for example, and then batch-processed, so all the collected data is processed in one go.	Data is processed immediately while it is entered, the user usually only has to wait a short time for a response. Interactive or online processing requires a user to supply an input.	Real time processing is a subset of interactive or online processing. This system doesn't need a user to control it, it works automatically. Real time processing is used in warning systems on aircraft, alarm systems in hazardous zones, burglar alarms etc.

### APPLICATIONS BASED ON SIZE AND COMPLEXITY OF BUSINESS

Small and Medium Enterprise (SME) Business	Large Business
The best software for small and medium businesses is software designed to help them to run their operations better, cut costs and replace paper processes.	When it comes to other sorts of business software, designed for the larger or more ambitious businesses, a business application being used by many small business establishments in India may not be effective for large business organizations.

### BUSINESS APPLICATIONS BASED ON NATURE OF APPLICATION

<b>Accounting Applications</b>	These are used by business entities for the purpose of day-to-day transactions of accounting and generating financial information such as balance sheet, profit and loss account and cash flow statements.
<b>Office Mgt. S/w</b>	These applications help entities to manage their office requirements like word processors (MS Word), electronic spreadsheets (MS Excel), presentation software (PowerPoint), file sharing systems, etc.
<b>Compliance Applications</b>	Enterprises need to comply with applicable laws and regulations. A separate class of business application are available that facilitate meeting the compliance requirements.
<b>CRM S/w</b>	These are specialized applications catering to the need of organizations largely in FMCG categories.
<b>Management Support S/w</b>	These are applications catering to decision-making needs of the management. They may be further classified based on the level of management using them.
<b>ERP S/w</b>	These applications called as Enterprise Resource Planning software, which are used by entities to manage resources optimally and to maximize the three Es i.e. Economy, Efficiency and Effectiveness of business operations.
<b>Product Lifecycle Mgt. S/w</b>	These applications are used by enterprises that are involved in development or launch of new products and are involved in development of new products.
<b>Logistics Mgt. S/w</b>	For large logistics managing companies, these are key business applications.
<b>Legal Mgt. S/w</b>	Government of India is keen to reduce the pendency in courts. As this process goes, on legal profession in India shall need such systems.
<b>Industry Specific Applications</b>	These are industry specific applications focused on a specific industry sector.

### BUSINESS PROCESS AUTOMATION (BPA)

It is a strategy that is used to optimize and streamline the essential business processes, using the latest technology to automate the functions involved in carrying them out. The objectives of BPA are given below:

<b>Confidentiality</b>	To ensure that data is only available to persons who have right to see the same.
<b>Integrity</b>	To ensure that no un-authorized amendments can be made in the data.
<b>Availability</b>	To ensure that data is available when asked for.
<b>Timeliness</b>	To ensure that data is made available in at the right time.

## APPLICATIONS THAT HELP ENTITY TO ACHIEVE BPA

Applications that help entity to achieve BPA are: TALLY, SAP R/3, MS Office Applications, Attendance Systems, Vehicle Tracking System, Automated Toll Collection Systems, Department Stores Systems, Travel Management Systems, Educational Institute Management Systems, etc.

Why BPA should be implemented?

### Reducing the Impact of Human Error

- ◆ BPA removes human participation in the process, which is the source of many errors.

### Transforming Data into Information

- ◆ BPA can, apart from collecting and storing data also analyze data and make it available in a form that is useful for decision-making.

### Improving performance and process effectiveness

- ◆ In many cases, tasks that must be done manually are the bottleneck in the process. Automating those manual tasks speeds up the effective throughput of the application.

### Making users more efficient and effective

- ◆ People can focus their energies on the tasks they do best, allowing the computers to handle those that machines are best suited for.

### Making the business more responsive

- ◆ Enterprises can easily automate new applications and

processes as they are introduced that provide greater control over business and IT processes.

### Improving Collaboration and Information Sharing

- ◆ Business processes designed through a collaborative interface mean IT can integrate its processes with the business-side logic that drives day-to-day operations.

### Cost Saving

- ◆ Automation leads to saving in time and labor costs through higher efficiency and better management of the people involved.

### To remain competitive

- ◆ To provide the level of products and services as offered by competition.

### Fast service to customers

- ◆ Automation shortens cycle times in the execution of processes through improved and refined business workflows and help enterprises to serve their customers faster and better.

**Information** may be defined as processed data, which is of value to the user. Information is necessary for decision making and survival of an entity as success of business depends upon making right decisions at the right time based on the right information available. The effort to create information from raw data is known as Information Processing.

**Classification of information based on level of human/computer intervention is as follows:**

<b>Manual Information Processing Cycle</b>	These are the systems where the level of manual intervention is very high. Components of manual information processing cycle include: <ul style="list-style-type: none"> <li>◆ <b>Input:</b> Put details in register.</li> <li>◆ <b>Process:</b> Summarize the information.</li> <li>◆ <b>Output:</b> Present information to management in the form of reports.</li> </ul>
<b>Computerized Information Processing Cycle</b>	These are systems where computers are used at every stage of transaction processing. The components of a computerized information processing cycle include: <ul style="list-style-type: none"> <li>◆ <b>Input:</b> Entering data into the computer;</li> <li>◆ <b>Processing:</b> Performing operations on the data;</li> <li>◆ <b>Storage:</b> Saving data, programs, or output for future use; and</li> <li>◆ <b>Output:</b> Presenting the results.</li> </ul>

- **Control** is defined as policies, procedures, practices and organization structure that are designed to provide reasonable assurance that business objectives are achieved and undesired events are prevented or detected and corrected. Major control objectives are as follows:

### Authorization

Ensures that all transactions are approved by responsible personnel in accordance with their specific or general authority before the transaction is recorded.

### Completeness

Ensures that no valid transactions have been omitted from the accounting records.

### Accuracy

Ensures that all valid transactions are accurate, consistent with the originating transaction data, and information is recorded in a timely manner.

### Validity

Ensures that all recorded transactions fairly represent the economic events that actually occurred, are lawful in nature, and have been executed in accordance with management's general authorization.

### Physical Safeguards and Security

Ensures that access to physical assets and information systems are controlled and properly restricted to authorized personnel.

### Error Handling

Ensures that errors detected at any stage of processing receive prompt corrective action and are reported to the appropriate level of management.

### Segregation of Duties

Ensures that duties are assigned to individuals in a manner that ensures that no one individual can control both the recording function and the procedures relative to processing a transaction.

## INFORMATION SYSTEMS' (IS) CONTROLS

Auditors need guidelines that will direct them toward those aspects of the information systems function in which material losses or account misstatements are most likely to occur. Controls reduce expected losses from unlawful events by either decreasing the probability of the event occurring in the first place or limiting the losses that arise of the event occurs.

**A. Managerial Controls:** These controls provide a stable infrastructure in which information systems can be built, operated, and maintained on a day-to-day basis. These are as follows:

Management Subsystem	Description of Subsystem
Top Mgt.	Responsible primarily for long – run policy decisions on how IS will be used in the organization.
Information Systems Mgt.	Provides advice to top mgt. in relation to long-run policy decision making & translates long-run policies into short-run goals & objectives.
Systems Development Mgt.	Responsible for the design, implementation, and maintenance of application systems.
Programming Management	Responsible for programming new system; maintain old ones and providing general systems support s/w.
Data Administration	Responsible for addressing planning and control issues in relation to use of an organization's data.
Quality Assurance Management	Responsible for ensuring IS development; implementation, operation, and maintenance conform to established quality standards.
Security Administration	Responsible for access controls and physical security over the information systems function.
Operations Management	Responsible for planning and control of the day-to-day operations of information systems.

**B. Application Controls:** It will examine the application functions that need to be in place to accomplish reliable information processing.

Application Subsystem	Description of Subsystem
Boundary	Comprises components that establish interface between user and system.
Input	Comprises components that capture, prepare, and enter commands and data into system.
Communication	Comprises components that transmit data among subsystems and systems.
Processing	Comprises the components that perform decision making, computation, classification, ordering, and summarization of data in the system.
Output	Comprises components that retrieve and present data to users of the system.
Database	Comprises the components that define, add, access, modify, and delete data in the system.

## MANAGERIAL FUNCTIONS BASED CONTROLS

**1. Top Management and Information Systems Management Controls:** The senior managers who take responsibility for IS function in an organization perform many functions that involves following:

- ◆ **Planning:** Determining the goals of the information systems function and the means of achieving these goals;
- ◆ **Organizing:** Gathering, allocating, and coordinating resources needed to accomplish goals;
- ◆ **Leading:** Motivating, guiding, and communicating with personnel; and
- ◆ **Controlling:** Comparing actual performance with planned performance as a basis for taking any corrective actions that are needed.

**2. Systems Development Management Controls:** These have the responsibility for the functions concerned with analyzing, designing, building, implementing, and maintaining information systems.

- ◆ **Concurrent Audit:** Auditors are members of the system development team. They assist the team in improving the quality of systems development for the specific system they are building and implementing.
- ◆ **Post-implementation Audit:** Auditors seek to help an organization learn from its experiences in the development of a specific application system.
- ◆ **General Audit :** Auditors evaluate systems development controls overall.

**3. Programming Management Controls:** Program development and implementation is a major phase within the systems development life cycle containing following six phases:

- ◆ **Planning:** Techniques like Work Breakdown Structures (WBS), Gantt Charts and PERT (Program Evaluation and Review Technique) Charts can be used to monitor progress against plan.
- ◆ **Design:** A systematic approach to program design, such as any of the structured design approaches or object-oriented design is adopted.
- ◆ **Coding:** Programmers must choose a module implementation and integration strategy, a coding strategy, and a documentation strategy .
- ◆ **Testing:** Three types of testing are to ensure that a developed or acquired program achieves its specified requirements.
- ◆ **Operation and Maintenance:** Management establishes formal mechanisms to monitor the status of operational programs so maintenance needs can be identified on a timely basis.

**4. Data Resource Management Controls:** Data is a critical resource that must be managed properly and therefore, accordingly, centralized planning and control are implemented.

- ◆ For data to be managed better users must be able to share data, data must be available to users when it is needed, in the location where it is needed, and in the form in which it is needed.
- ◆ It must be controlled carefully, however, because consequences are serious if data definition is compromised or destroyed.

**5. Quality Assurance Management Controls**

- ◆ Organizations are increasingly producing safety-critical systems and users are becoming more demanding in terms of the quality of the software they employ to undertake their work.

**6. Security Management Controls**

- Information security administrators are responsible for ensuring that information systems assets are secure. The major threats to the security of information systems and their controls are as given below:
- ◆ **Fire:** Well-designed, reliable fire-protection systems must be implemented.
  - ◆ **Water:** Facilities must be designed and sited to mitigate losses from water damage.
  - ◆ **Energy Variations:** Voltage regulators, circuit breakers, and uninterruptible power supplies can be used.
  - ◆ **Structural Damage:** Facilities must be designed to withstand structural damage.
  - ◆ **Pollution:** Regular cleaning of facilities and equipment should occur.
  - ◆ **Unauthorized Intrusion:** Physical access controls can be used.
  - ◆ **Viruses and Worms:** Controls to prevent use of virus-infected programs and to close security loopholes that allow worms to propagate.
  - ◆ **Misuse of software, data and services:** Code of conduct to govern the actions of IS employees.
  - ◆ **Hackers:** Strong, logical access controls to mitigate losses from the activities of hackers.

**7. Operations Management Controls**

- ◆ These must continuously monitor the performance of hardware/software platform to ensure that systems are executing efficiently, an acceptable response time or turnaround time is being achieved, and an acceptable level of uptime is occurring.

## APPLICATION FUNCTIONS BASED CONTROLS

### Boundary Controls

- ◆ **Cryptographic Controls:** These are designed to protect the privacy of data and to prevent unauthorized modifications of data.
- ◆ **Access Controls:** These restrict use of computer system resources to authorized users, limit actions authorized users can take with these resources, and ensure that users obtain only authentic computer system resources.
- ◆ **Personal Identification Numbers (PIN):** It is similar to a password assigned to a user by an institution based on the user characteristics and encrypted using a cryptographic algorithm.
- ◆ **Digital Signatures:** These establish the authenticity of persons & prevent denial of messages or contracts when data is exchanged electronically.
- ◆ **Plastic Cards:** These are used to identify a user need to go through procedural controls like application for a card, preparation of the card, issue of card, use of the card and return of the card or card termination phases.

### Input Controls

- ◆ **Source Document Control:** These facilitate data entry into a computer system & reference checking.
- ◆ **Data Coding Controls:** These are put in place to reduce user error during data feeding.
- ◆ **Batch Controls:** These are put in place at locations where batch processing is being used.
- ◆ **Validation Controls:** These are intended to detect errors in transaction data before the data are processed.

### Communication Controls

- ◆ **Physical Component Controls:** One way to reduce expected losses in the communication subsystem is to choose physical components that have characteristics that make them reliable and that incorporate features or provide controls that mitigate the possible effects of exposures.
- ◆ **Line Error Controls:** Whenever data is transmitted over a communication line, it can be received in error because of attenuation, distortion, or noise that occurs on the line.
- ◆ **Flow Controls:** These are needed because two nodes in a network can differ in terms of the rate at which they can send receive and process data.
- ◆ **Link Controls:** This involves two common protocols – HDLC (Higher Level Data Control) and SDLC (Synchronous Data Link Control)
- ◆ **Topological Controls:** Specifies the location of nodes within a network, the ways in which these nodes will be linked, and the data transmission capabilities of the links between the nodes.
- ◆ **Channel Access Controls:** Two different nodes in a network can compete to use a communication channel. Whenever the possibility of contention for the channel exists, some type of channel access control technique must be used.
- ◆ **Internetworking Controls:** Internetworking is the process of connecting two or more communication networks together to allow the users of one network to communicate with the users of other networks.

### Processing Controls

- ◆ **Run-to-Run Totals:** These help in verifying data that is subject to process through different stages.
- ◆ **Reasonableness Verification:** Two or more fields can be compared/cross verified to ensure their correctness.
- ◆ **Edit Checks:** Edit checks similar to the data validation controls can also be used at the processing stage to verify accuracy and completeness of data.
- ◆ **Field Initialization:** Data overflow can occur, if records are constantly added to a table or if fields are added to a record without initializing it, i.e., setting all values to zero before inserting the field or record.
- ◆ **Exception Reports:** Exception reports are generated to identify errors in data processed.
- ◆ **Existence/Recovery Controls:** The check-point/restart logs, facility is a short-term backup and recovery control that enables a system to be recovered if failure is temporary and localized.

### Output Controls

- ◆ **Storage and Logging of Sensitive and Critical Forms:** Pre-printed stationery should be stored securely to prevent unauthorized destruction or removal and usage.
- ◆ **Logging of Output Program Executions:** When programs used for output of data are executed, they should be logged and monitored.
- ◆ **Controls over Printing:** This ensures that unauthorized disclosure of information printed is prevented.
- ◆ **Report Distribution and Collection Controls:** Distribution of reports should be in a secure way to avoid unauthorized disclosure of data.
- ◆ **Retention Controls:** These consider duration for which outputs should be retained before being destroyed.
- ◆ **Existence/Recovery Controls:** These are needed to recover output in the event that it is lost or destroyed.

### Database Controls

- ◆ **Sequence Check Transaction and Master Files:** Synchronization and correct sequence of processing between the master file and transaction file is critical to maintain integrity of updation, insertion or deletion of records in the master file with respect to the transaction records.
- ◆ **Ensure all records on files are processed:** While processing transaction file records mapped to respective master file end-of-file of transaction file with respect to the end-of-file of the master file is to be ensured.
- ◆ **Process multiple transactions for a single record in the correct order:** Multiple transactions can occur based on a single master record.

## BUSINESS AND COMMERCIAL KNOWLEDGE: A CAPSULE FOR QUICK RECAP

This capsule on Foundation Paper 4 part II: Business and Commercial Knowledge broadly covers the companies discussed in detail in Chapter 3 of the Study Material. To facilitate easy understanding of the significant changes in the year 2019, an attempt has been made to give an overview of the significant changes in the companies in tabulated form.

It may be kept in mind that the capsule is not the replacement of the Study Material. Reading of Study Material is absolute essential. This capsule is intended to assist you in the process of quick revision. Students are also advised to remain update with current news concerning business organisations.

### A. AN OVERVIEW OF SELECTED INDIAN COMPANIES

S.No	Company's Name	Incorporation year	Headquarters	Chairman	Present Managing Director	Chief Executive Officer	Chief Financial Officer	Ranking in Forbes World's Largest Public Corporations List 2019	Ranking in Forbes World's Best Employer's List 2019
1	Adani Ports and Special Economic Zone Ltd.	1998	Ahmedabad, Gujrat, India		Gautambhai Shantilal Adani	Karan Gautambhai Adani	Deepak Maheshwari	1706 <sup>th</sup>	276 <sup>th</sup>
2	Asian Paints Ltd.	1942	Mumbai, Maharashtra, India		K B S Anand	K B S Anand	Jayesh Merchant	1832 <sup>nd</sup>	232 <sup>nd</sup>
3	Axis Bank Ltd.	1993	Mumbai, Maharashtra, India		Amitabh Chaudhry	Amitabh Chaudhry	Jairam Sridharan	741 <sup>st</sup>	283 <sup>rd</sup>
4	Bajaj Auto Ltd.	1945	Pune, Maharashtra, India	Rahul Bajaj	Rajiv Bajaj	Rajiv Bajaj	Soumen Ray	1503 <sup>rd</sup>	448 <sup>th</sup>
5	Bharti Airtel Ltd.	1995	New Delhi, India	Sunil Bharti Mittal	Gopal Vittal	Gopal Vittal	Badal Bagri	852 <sup>nd</sup>	
6	Bharat Petroleum Corporation Ltd.	1952	Mumbai, Maharashtra, India	D Rajkumar	D Rajkumar	D Rajkumar	Neelakantapillai Vijayagopal	628 <sup>th</sup>	
7	Cipla Ltd.	1935	Mumbai, Maharashtra, India	Y K Hamied	Umang Vohra	Umang Vohra	Kedar Upadhey		
8	Coal India Ltd.	1975	Kolkata, West Bengal, India		Anil Kumar Jha		S Sarkar	583 <sup>rd</sup>	
9	Dr. Reddy's Lab. Ltd.	1984	Hyderabad, Telangana, India	Kallam Satish Reddy		Erez Israeli	Saumen Chakraborty		
10	GAIL (India) Ltd	1984	New Delhi, India	Ashutosh Karnatak	Ashutosh Karnatak	Ashutosh Karnatak	A K Tiwari	1186 <sup>th</sup>	290 <sup>th</sup>
11	HDFC Bank Ltd.	1994	Mumbai, Maharashtra, India	Deepak S Parek	Aditya Puri		Srinivasan Vaidyanathan	209 <sup>th</sup>	119 <sup>th</sup>
12	ICICI Bank Ltd.	1994	Mumbai, Maharashtra, India	Girish Chandra Chaturvedi	Sandeep Bakshi	Sandeep Bakshi	Rakesh Jha	400 <sup>th</sup>	
13	Indian Oil Corporation Ltd.	1959	New Delhi, India	Sanjiv Singh	Sanjiv Singh		Sandeep Kumar Gupta	288 <sup>th</sup>	
14	Infosys Ltd.	1981	Bengaluru, Karnataka, India	Nandan Nilekani	Salil Parekh	Salil Parekh	Nilanjan Roy	643 <sup>rd</sup>	
15	ITC Ltd.	1910	Kolkata, West Bengal, India	Sanjiv Puri	Sanjiv Puri	Sanjiv Puri	Rajiv Tandon	806 <sup>th</sup>	117 <sup>th</sup>
16	Larsen & Toubro Ltd.	1938	Mumbai, Maharashtra, India	Anil Manibhai Naik	S. N. Subrahmanyam	S. N. Subrahmanyam	Shankar Raman	438 <sup>th</sup>	29 <sup>th</sup>
17	NTPC Ltd.	1975	New Delhi, India	Gurdeep Singh		Gurdeep Singh	Anil Kumar Gautam	492 <sup>nd</sup>	288 <sup>th</sup>
18	Oil & Natural Gas Corporation Ltd.	1956	Uttarakhand, India	Shashi Shankar	Shashi Shankar		Subhash Kumar	220 <sup>th</sup>	
19	Power Grid Corporation of India Ltd.	1989	Gurugram, Haryana, India	Sreekant Kandikuppa (K. Sreekant)	Sreekant Kandikuppa (K. Sreekant)		Sriramchandra Murty Kocherlakota (KSR Murty)	865 <sup>th</sup>	341 <sup>st</sup>
20	Reliance Industries Ltd.	1966	Mumbai, Maharashtra, India	Mukesh Ambani	Mukesh Ambani	Mukesh Ambani	Srikanth Venkatchari	71 <sup>st</sup>	
21	State Bank of India	1806	Mumbai, Maharashtra, India	Rajnish Kumar	Rajnish Kumar		Prashant Kumar	460 <sup>th</sup>	385 <sup>th</sup>
22	Tata Sons Private Ltd.	1868	Bombay House, Mumbai, Maharashtra, India	Natarjan Chandrasekaran	Natarjan Chandrasekaran		Eruch Noshir Kapadia	Tata Motors-769 <sup>th</sup> TCS - 374 <sup>th</sup> Tata Steel - 552 <sup>nd</sup>	Tata Motors - 304 <sup>th</sup> Tata Steel - 391 <sup>st</sup>
23	Wipro Ltd.	1945	Bengaluru, Karnataka, India	Azim Premji	Azim Premji	Abidali Neemuchwala	Jatin Dalal	857 <sup>th</sup>	193 <sup>rd</sup>

# BUSINESS AND COMMERCIAL KNOWLEDGE

## B. AN OVERVIEW OF SELECTED GLOBAL COMPANIES

S.No	Company's Name	Incorporation year	Headquarters	Chairman	Chief Executive Officer	Chief Financial Officer	Ranking in Forbes World's Largest Public Corporations List 2019	Ranking in Forbes World's Best Employer's List 2019	Ranking in Fortune 500 Companies List 2019
1	Deutsche Bank	1870	Frankfurt, Germany	Paul Achleitner	Christian Sewing	Frank Kuhuke	547 <sup>th</sup>		
2	American Express	1850	New York, United States of America	Stephen Squeri	Stephen Squeri	Jeffery C Campbell	83 <sup>rd</sup>	43 <sup>rd</sup>	72 <sup>nd</sup>
3	Nestle	1866	Vevey, Switzerland	Paul Bulcke	Ulf Mark-Schneider	Francois-Xavier Roger	42 <sup>nd</sup>	79 <sup>th</sup>	
4	Microsoft Corporation	1975	Washington, United States of America	John Thompson	Satya Nadella	Amy Hood	16 <sup>th</sup>	2 <sup>nd</sup>	26 <sup>th</sup>
5	IBM Corporation	1911	New York, United States of America	Ginni Rometty	Ginni Rometty	James J. Kovnaugh	60 <sup>th</sup>	11 <sup>th</sup>	38 <sup>th</sup>
6	Intel Corporation	1968	California, United States of America	Andy D. Bryant	Bob Swan	George Davis	44 <sup>th</sup>	64 <sup>th</sup>	43 <sup>rd</sup>
7	HP Inc.	1939	California, United States of America	Chip Bergh	Enrique Lores	Steve Fieler	279 <sup>th</sup>	393 <sup>rd</sup>	55 <sup>th</sup>
8	Apple	1977	California, United States of America		Tim Cook	Luca Maestri	6 <sup>th</sup>	4 <sup>th</sup>	3 <sup>rd</sup>
9	Walmart	1969	Arkansas, United States of America	Greg Penner	Dough McMillon	Bret Biggs	29 <sup>th</sup>		1 <sup>st</sup>

## FINANCE UPDATE

### Saying goodbye to Libor, the world's most valuable benchmark

After being the global benchmark for lending and borrowings for over 33 years, Libor (London Inter-Bank Offered Rate), published by the Financial Conduct Authority (FCA) of UK, is going to stop from December 2021. Over \$350 trillion worth of contracts across the globe are pegged to Libor which is the key interest rate benchmark for several major currencies. Many current contracts would extend beyond 2021. The transition to alternative reference rates will involve considerable efforts for Libor users for impact assessments, amending contracts and updating systems.

#### THE NEW BENCHMARK

It is still unclear what will replace LIBOR. In April 2017, the Risk-Free Rate Working Group in the UK selected the Sterling Over Night Index Average (SONIA) as its proposed alternative benchmark. In June 2017, the US Alternative Reference Rates Committee chose a broad Treasuries repo rate as their preferred

risk-free rate (RFR). Now known as SOFR (the Secured Overnight Financing Rate), it has been officially published since early April 2018. The biggest challenge with RFRs that, currently they have no term structure and some of the proposed alternative RFRs (including SOFR) are secured and as a consequence, unlike Libor, do not bear a credit spread. These aspects will need to be considered when preparing for the transition. It has been tough to agree on a common approach with respect to standard methodologies for pricing the credit and term risk to be added to the risk-free rate. To do away with these challenges, the ICE Benchmark Administration, has proposed switching to the US Dollar ICE Bank Yield Index (IBYI), which competes with SOFR.

#### Read more at:

[https://economictimes.indiatimes.com/markets/stocks/news/saying-goodbye-to-libor-the-worlds-most-valuable-benchmark/articleshow/69532390.cms?utm\\_source=contentofinterest&utm\\_medium=text&utm\\_campaign=cppst](https://economictimes.indiatimes.com/markets/stocks/news/saying-goodbye-to-libor-the-worlds-most-valuable-benchmark/articleshow/69532390.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst)

## CROSSWORD SOLUTION – FEBRUARY 2020

1O	2C	3T	4E	5T		6G	7R	8O	9S	S	
10V	O	I	C	E	D		11C	U	T		12R
13A	C	T	O	R				T		14P	I
15L	O			16I	17F	A	18C		19G	E	N
	20M	21V			O		22O	23P	E	N	
24D	O	U	25B	26L	E	W	H	A	M	M	27Y
E		28L	E	A	S		29E	T		A	O
M		30T	T	S		31A	S	H	32E	N	
A		33U	A	T		34R	I	S	K		R
35N	36O	R			37J	I	O		38E	39O	N
40D	I	E			41R	A	N		S	G	
42E	L		43T	44U				45R	O	L	46E
D			47E	R	G	48O		49S	U	E	Z
	50E	T	A	L		51R	A	P	T		E

## SIGNIFICANT DIRECT TAX PROPOSALS IN THE FINANCE BILL, 2020

The Finance Bill, 2020, introduced in the Lok Sabha on 1st February, 2020, contains a host of direct tax proposals impacting individuals, HUFs, co-operative societies, companies, trusts and institutions. The Bill also contains a number of provisions impacting international taxation and non-residents. Incentives to eligible start-ups, removal of dividend distribution tax, introduction of E-appeals and E-penalty and insertion of Taxpayer's Charter are some of the significant proposals in the Finance Bill, 2020. The Bill also proposes certain changes in the TDS and TCS regime.

The significant direct tax proposals in the Finance Bill, 2020, as introduced in the Lok Sabha on 1st February, 2020, are detailed hereunder:

### Special rates of income-tax : Individuals, HuFs and Co-operative Societies

#### Concessional rates of tax for individuals and HUFs

New section 115BAC is proposed to be inserted w.e.f. A.Y.2021-22 to provide an **option to an individual or HUF** to pay tax in respect of their total income (other than income chargeable to tax at special rates under Chapter XII) at following concessional rates **if they do not avail certain exemptions/deductions** like LTC, standard deduction under the head "Salaries", interest on housing loan on self-occupied property, deductions under Chapter VI-A (other than 80CCD(2) or section 80JAA) etc. –

Total Income (₹)	Tax Rate
Upto ₹ 2,50,000	Nil
₹ 2,50,001 – ₹ 5,00,000	5%
₹ 5,00,001 – ₹ 7,50,000	10%
₹ 7,50,001 – ₹ 10,00,000	15%
₹ 10,00,001 – ₹ 12,50,000	20%
₹ 12,50,001 – ₹ 15,00,000	25%
Above ₹ 15,00,000	30%

Surcharge would be leviable at the rates as applicable for A.Y.2020-21 i.e., 10%, 15%, 25% and 37% for total income exceeding ₹ 50 lakh, ₹ 1 crore, ₹ 2 crore and ₹ 5 crore, respectively.

An individual or HUF, who desires to opt u/s 115BAC, has to exercise such option every year in the prescribed manner along with the return of income to be furnished u/s 139(1), if he does not have business income. However, where the total income of an individual/HUF includes business income, the option once exercised would apply for that year and every subsequent year. Individuals and HUFs exercising option u/s 115BAC are not liable to alternate minimum tax u/s 115JC.

Existing income-tax rates would continue for individuals and HUFs not opting for provisions of section 115BAC. In respect of such individuals and HUFs, there is no change in the tax rates and slabs.

#### Concessional tax rate for co-operative society

New section 115BAD is proposed to be inserted w.e.f. A.Y.2021-22 to provide an option to **co-operative society, resident in India, to pay tax@25.168%** (i.e., tax@22% plus surcharge@10% plus health and education cess (HEC)@4%) in respect of its total income subject to certain conditions. The option, once exercised, would apply for that year and every subsequent year. Such co-operative society opting for section 115BAD will not be liable to pay alternate minimum tax under section 115JC.

#### Concessional rate of tax for power generating companies

It is proposed to amend section 115BAB w.e.f. A.Y.2020-21 to include business of **generation of electricity** within the scope

of business of manufacture or production of an article or thing, so that a newly set up electricity generating domestic companies can also opt to pay tax @15% in respect of their total income subject to fulfillment of certain conditions specified therein.

### Residential Status

#### Conditions for residency modified

- Upto A.Y.2020-21, an **Indian citizen or a person of Indian origin who, being outside India, comes on a visit to India** would become resident in India only if he stays in India for a period of 182 days or more during the relevant previous year. Such **minimum period of stay in India** for becoming resident in India is proposed to be **reduced from 182 days to 120 days** w.e.f. A.Y.2021-22. Such individual would become resident in India if he stays in India in the relevant previous year for at least 182 days; or if he stays in India in the relevant previous year for at least 120 days and he stays in the India in the four immediately preceding previous years for at least 365 days.
- The condition for **"resident but not ordinarily resident"** is proposed to be amended w.e.f. A.Y.2021-22 to provide that a resident individual or HUF would be resident but not ordinarily resident in India in a previous year, **if such individual or manager of HUF has been non-resident in seven out of ten previous years preceding that year.**
- An Indian citizen who is not liable to tax in any other country, on account of his domicile, or residency or any other criteria of similar nature, would be deemed to be resident in India w.e.f. A.Y.2021-22.** In such a case, it has been clarified that income earned outside India would be subject to tax in India in his hands only if it is derived from business controlled from or profession set up in India.

### Business Taxation

#### Incentives to Start-ups

At present, an eligible start-up is allowed deduction under section 80-IAC of 100% of its the profits for three consecutive assessment years out of seven years, if its total turnover does not exceed ₹ 25 crore, during the previous year for which deduction is claimed.

The scope of section 80-IAC is proposed to be expanded w.e.f. A.Y.2021-22 by **increasing the threshold turnover limit from existing ₹ 25 crore to ₹ 100 crores.** Moreover, the time window for claiming deduction is proposed to be increased and the eligible start up can avail benefit for **three consecutive assessment years out of ten years.**

#### Deferment of tax/TDS liability on ESOP provided by eligible start-ups

At present, ESOPs are taxed as perquisite u/s 17(2) in the hands of employees at the time of exercising such option. Thereafter, at the time of sale, tax on capital gains has to be paid. Tax liability on ESOPs granted by an employer, being an eligible start-up under section 80-IAC, to its employees is proposed to be **deferred by:**

- 48 months** from the end of the relevant assessment year; or
- till the employee ceases to be the employee** of the person; or
- when the **said employee sells such specified security or sweat equity shares, whichever is earliest.**

Consequently, tax needs to be deducted or paid u/s 192 by the eligible start up within 14 days from the above specified date on the basis of rates in force for the financial year in which such specified security or sweat equity shares is allotted or

## UNION BUDGET 2020-21

transferred. This amendment is proposed to be made effective in respect of income by way of such perquisite payable by the employer, being an eligible start-up u/s 80-IAC, for the previous year relevant to A.Y.2021-22 or any subsequent previous year. This is a positive measure facilitating eligible start-ups to attract talent, without huge cash outgo in the initial year(s).

### Time limit for approval of affordable housing project extended

In order to incentivise building affordable housing to boost the supply of such houses, the period of approval of the project by the competent authority to be extended by one more year i.e., **from 31<sup>st</sup> March 2020 to 31<sup>st</sup> March, 2021** for availing **deduction u/s 80-IBA of 100% of profits and gains derived by an assessee from the business of developing and building affordable housing projects.**

Likewise, **section 80EEA** providing for an additional deduction up to ₹ 1,50,000 from gross total income of an individual towards interest paid by him on loans sanctioned between 1.4.2019 to 31.3.2020 for purchase of an affordable residential house has been amended to **extend the period** upto which loan can be sanctioned for availing such benefit from 31.3.2020 to **31.3.2021.**

### Tax Audit under section 44AB & Due date of filing of return of income

At present, every person carrying on business is required to get his accounts audited, if his total sales, turnover or gross receipts, in business exceeds ₹ 1 crore in any previous year.

It is proposed to increase, w.e.f. A.Y.2020-21, the **turnover threshold** for compulsory tax audit from existing **₹ 1 crore to ₹ 5 crore** in a case where **aggregate cash receipts are not more than 5% of total receipts and aggregate cash payments are not more than 5% of total payments.**

Further, it is also proposed to provide that tax audit report to be filed a month before the due date of filing income-tax return. Accordingly, the said **due date for filing of income-tax returns** for A.Y.2020-21 and subsequent assessment years is proposed to be extended from 30<sup>th</sup> September to 31<sup>st</sup> October of the relevant assessment year so that there is no requirement for change in the date of filing tax audit report. Thus, the due date of filing of return of income of a company, a person other than a company whose accounts are required to be audited and a partner of a firm whose accounts are required to be audited would be **31<sup>st</sup> October of the relevant assessment year.**

### No dividend distribution tax (DDT) on dividend distributed by domestic company and no additional income-tax on income distributed by mutual funds

At present, domestic companies are liable to pay dividend distribution tax on the amount of dividend distributed. Consequently, such dividend is exempt in the hands of shareholders. Likewise, specified companies and Mutual Funds are also liable to pay additional income-tax on any amount of income distributed by them to its unit holders. Such income is then exempt in the hands of unit holders.

It is now proposed that a domestic company or specified company or mutual fund would not be required to pay any DDT or additional income-tax on the amount of dividend or income distributed on or after 1.4.2020. Consequently, such dividend or income would be taxable in the hands of shareholders or unit holders, as the case may be, w.e.f. A.Y.2021-22. The only deduction permissible against such income is interest expenditure, which cannot exceed 20% of such income. **Tax is required to be deducted at source@10% under section 194 and 194K on dividend and income distributed by a domestic company and mutual fund, respectively.** The threshold limit for non-deduction of tax at source under section 194K is ₹ 5,000. For section 194, however, the threshold of ₹ 5,000

is only in respect of dividend distributed by a company to an individual shareholder by any mode other than cash.

**New section 80M** to be inserted w.e.f. A.Y.2021-22 to provide **deduction in respect of certain inter-corporate dividends** i.e., where the gross total income of a domestic company includes dividend received from other domestic companies, then, while computing its total income, it can reduce such dividends received to the extent it does not exceed the dividends distributed by it on or before one month prior to the due date of furnishing return of income.

### Increase in permissible variation between actual consideration and stamp duty value for transfer of immovable property, being land or building or both

Sections 43CA, 50C and 56 provide that no adjustments shall be made in respect of transfer of immovable property, being land or building or both, in a case where the variation between stamp duty value and the actual sale consideration is not more than 5% of the actual sale consideration. The permissible variation is proposed to be increased from **5% to 10% w.e.f. A.Y.2021-22.**

## Tax Deduction at Source & Tax Collection at Source

### Tax to be deducted at source by co-operative society on interest paid under section 194A

The scope of section 194A is proposed to be expanded w.e.f. 1<sup>st</sup> April, 2020 by requiring tax to be deducted at source by a co-operative society on interest credited or paid by it, -

- (a) its total sales, gross receipts or turnover exceeds Rs.50 crores during the financial year immediately preceding the financial year in which the interest is credited or paid; and
- (b) the amount of interest credited or paid during the financial year is more than
  - (i) ₹ 50,000 in case of payee being a senior citizen and
  - (ii) ₹ 40,000, in any other case.

Such co-operative society is required to deduct tax under section 194A on interest credited or paid by it -

- to its member or to any other co-operative society; or
- in respect of deposits with a primary agricultural credit society or a primary credit society or a co-operative land mortgage bank or a co-operative land development bank or
- in respect of deposits with a co-operative bank other than a co-operative society or bank engaged in carrying on the business of banking

### Definition of "Work" under section 194C expanded

The scope of definition of "work" for the purpose of tax deduction under section 194C to be expanded w.e.f. 1<sup>st</sup> April, 2020 to include **manufacturing or supplying a product according to the requirement or specification of a customer by using material purchased from such customer or its associate.** "Associate" means a person related to the customer in such manner as defined under section 40A(2)(b), as if the customer is the person placed in relation to the assessee for the purpose of that section.

### TDS on E-commerce transactions

New section 194-O to be inserted w.e.f. 1<sup>st</sup> April, 2020 to require the **E-commerce operator to deduct tax at source at the time of credit of amount of sale or service or both to the account of e-commerce participant or at the time of payment to such participant, whichever is earlier.** Tax is required to be deducted @1% on the gross amount of such sales or services or both. However, where PAN/Aadhar is not furnished, tax @5% is required to be deducted at source.

Moreover, no tax would be deducted at source in case of an e-commerce participant (being an individual or HUF) whose gross amount of sales or services or both from such electronic

facility or platform does not exceed ₹ 5 lakh and who furnishes his PAN/Aadhaar to the e-commerce operator.

### **Reduced rate of TDS on fees for technical services**

Rate of TDS under section 194J in case of fees for technical services other than professional services is proposed to be reduced from **10% to 2% w.e.f. 1<sup>st</sup> April, 2020.**

### **TCS on overseas remittance, sale of overseas tour package and on sale of goods above certain limit**

The following amendments are proposed in section 206C w.e.f. 1<sup>st</sup> April, 2020:

- ♦ Authorised dealer to collect tax at source @5% on the amount or aggregate of amounts received by him under the **Liberalised Remittance Scheme of the RBI** for overseas remittance from a buyer, being a person remitting such amount out of India, **if such amount or aggregate of amounts is ₹ 7,00,000 or more** in a financial year. However, where PAN/Aadhar is not furnished, tax @10% is required to be collected at source.

- ♦ A **seller of an overseas tour package** is also required to collect tax at source@5% on the amount received from the buyer who purchases the package. In case PAN/Aadhar is not furnished, tax @10% is required to be collected at source.

*Note - In both such cases, covered under sub-section (1G) of section 206C, tax is required to be collected at the time of debiting the amount payable by the buyer or at the time of receipt of such amount, whichever is earlier.*

- ♦ TCS is also proposed to be levied on sale of goods [not covered under sub-sections (1)/(1F)/(1G)] in excess of ₹ 50 lakhs in a year by a seller **whose gross receipts or turnover from business is more than ₹ 10 crore** during the financial year immediately preceding such financial year in which sale has taken place. Tax is to be collected at source @0.1% of the sale consideration exceeding ₹ 50 lakhs, at the time of receipt. In case of non-furnishing of PAN/Aadhar, tax @1% is required to be collected at source.

## Penalties

### **Penalty for fake entry in books of account**

New section 271AAD is proposed to be inserted w.e.f. 1<sup>st</sup> April, 2020 to provide for levy of penalty on a person if during any proceeding it is found that in the books of accounts there is a **false entry or any entry relevant for computation of total income of such person has been omitted to evade tax liability**, of sum equal to the aggregate amount of such false entries or omitted entry.

It is also proposed to levy penalty of a sum equal to the aggregate amount of such false entries or omitted entry on any other person, who causes the person referred above in any manner to make a false entry or to omit or cause to omit any entry.

### **E-penalty Scheme**

Section 274 details the procedure for imposing penalty under Chapter XXI of the Income-tax Act, 1961. In order to ensure that the reforms initiated by the Department to eliminate human interface from the system reaches the next level, an e-penalty scheme is proposed to be launched on the lines of E-assessment Scheme-2019.

Accordingly, new sub-section (2A) is proposed to be inserted in section 274 w.e.f. 1<sup>st</sup> April, 2020 to empower the Central Government to notify an e-scheme for the purposes of imposing penalty so as to **impart greater efficiency, transparency and accountability** by -

(a) eliminating the interface between the Assessing Officer and the assessee in the course of proceedings to the extent technologically feasible;

(b) optimising utilisation of the resources through economies of scale and functional specialisation;

(c) introducing a mechanism for imposing of penalty with dynamic jurisdiction in which penalty shall be imposed by one or more income-tax authorities.

## Appeals and Revision

### **ITAT to order stay of demand only on payment of 20% of the tax payable including interest, penalty etc. by the assessee:**

Section 254(2A) requires the Income Tax Appellate Tribunal (ITAT) to decide an appeal filed by the assessee or the Assessing Officer under section 253 within four years from the end of the financial year in which such appeal is filed. The ITAT may, after considering the merits of the application made by the assessee, pass an order of stay for a period not exceeding 180 days in any proceedings against the order of the Commissioner (Appeals).

It is proposed that, w.e.f. 1<sup>st</sup> April, 2020, **stay may be granted by the ITAT, subject to the condition that the assessee deposits not less than 20% of the amount of tax, interest, fee, penalty, or any other sum payable under the provisions of this Act, or furnish security of equal amount in respect thereof.**

Further, it is also clarified that no extension of stay shall be granted by the ITAT, where such appeal is not so disposed within the said period of stay (not exceeding 180 days) as specified in the order of stay. However, on an application made by the assessee, a further stay can be granted, if the delay in disposing of the appeal is not attributable to the assessee and the assessee has deposited not less than 20% of the amount of tax, interest, fee, penalty, or any other sum payable under the provisions of this Act, or has furnished security of equal amount in respect thereof. **The total stay granted by ITAT, however, cannot exceed 365 days.**

### **Faceless appeal**

Sub-section (6B) to be inserted in section 250 w.e.f. 1<sup>st</sup> April, 2020 to empower the Central Government to notify an e-appeal scheme for disposal of appeal so as to impart greater efficiency, transparency and accountability; and to eliminate the interface between the Commissioner (Appeals) and the appellant in the course of appellate proceedings to the extent technologically feasible.

## International Taxation

### **Period for withholding tax at concessional rate under section 194LC and 194LD extended**

At present, tax is required to be deducted at source @5% under section 194LC on interest credited or paid by an Indian company or a business trust to a non-corporate non-resident or a foreign company on the borrowings (approved by the Central Government) made before 1<sup>st</sup> July, 2020 in foreign currency from sources outside India.

Section 194LD provides for withholding tax at concessional rate of 5% on interest credited or paid at any time on or after 1<sup>st</sup> June, 2013 but before 1<sup>st</sup> July, 2020 to Foreign Institutional Investors (FII) and Qualified Foreign Investors (QFIs) on their investment in Government securities and Rupee Denominated Bonds (RDBs) of an Indian company.

It is proposed to extend the above time limits under section 194LC for borrowing money from outside India, and under section 194LD, for payment of interest, **from 30th June, 2020 to 30th June, 2023.**

### **Scope of section 194LC and 194LD expanded**

Scope of **section 194LC** is proposed to be expanded to provide for concessional rate of **TDS@4% on interest payable to a non-corporate non-resident or foreign company in respect of monies borrowed from a source outside India, by way of issue of any long-term bond or rupee denominated bond**

# UNION BUDGET 2020-21

**(RDB) on or after 1st April, 2020 but before 1st July, 2023 and which is listed only on a recognised stock exchange located in any IFSC.**

Further, the scope of **section 194LD** is also proposed to be expanded to provide for concessional rate of TDS@5% on interest payable, on or after 1<sup>st</sup> April, 2020 but before 1<sup>st</sup> July, 2023 to a FII or QFI in respect of investment made in **municipal debt security**.

## **Interest paid or payable to PE in India (engaged in banking business) of non-resident bank excluded for the purpose of disallowance under section 94B**

Section 94B restricts deduction in respect of interest paid or payable by an Indian company, or a permanent establishment (PE) of a foreign company, to its associated enterprises (AE) to 30% of its earnings before interest, taxes, depreciation and amortisation (EBITDA) or interest paid or payable to AE, whichever is less. The excess interest paid or payable would be disallowed.

At present, the provisions of section 94B are not applicable to an Indian company or a permanent establishment of a foreign company which is engaged in the business of banking or insurance. Thus, excess interest paid or payable by an Indian company or a permanent establishment of a foreign company which is engaged in the business of banking or insurance to its associated enterprise would not be disallowed.

However, the provisions of this section may get attracted, in a case where interest is paid or payable by an enterprise in India (say X Ltd.) to a PE in India of a non-resident engaged in the business of banking which becomes its associated enterprise on account of loan advanced by the PE to X Ltd. being 51% or more of the book value of the total assets of X Ltd. This is because the residential status of the PE in India would be the same as that of the enterprise of which it is a PE; hence, the PE of a non-resident engaged in the business of banking would also be a non-resident, thereby attracting interest disallowance u/s 94B.

Therefore, **section 94B is proposed to be amended w.e.f. A.Y.2021-22 to extend the benefit of non-applicability of disallowance thereunder to interest paid or payable on a debt issued by a lender which is PE in India of a non-resident engaged in the business of banking.**

## **Exemption from filing of return of income extended to non-residents receiving royalty or Fees for Technical Services (FTS) under section 115A**

At present, section 115A exempts a non-resident in receipt of dividend or interest taxable under section 115A from filing of return of income, if the total income of such non-resident comprises only of such dividend or interest and tax deductible on such income has been deducted at source; however, the same relief is not available to non-residents whose total income consists only of income by way of royalty or FTS taxable under section 115A.

Section 115A is proposed to be amended w.e.f. A.Y.2020-21 to extend the **exemption from filing of return to non-resident in receipt of royalty or FTS or dividend or interest taxable under section 115A, if the total income of such non-resident comprises only of such income taxable under section 115A and tax deductible thereon has been deducted at the rates which are not lower than the rate specified in respect of such income under section 115A.**

## **Determination of income of non-resident attributable to operations carried out in India for attracting deemed accrual provisions under section 9(1)(i) in accordance with Safe Harbour Rules (SHR) and Advance Pricing Agreement (APA)**

Section 92CB empowers the CBDT to make safe harbour rules (SHR) for determination of the arm's length price (ALP) under section 92C. The term "safe harbour" means circumstances in

which the income-tax authority shall accept the transfer price declared by the assessee.

Further, section 92CC empowers the CBDT to enter into an advance pricing agreement (APA) with any person, determining the ALP or specifying the manner in which the ALP is to be determined, in relation to an international transaction to be entered into by that person.

SHR provides tax certainty for relatively smaller cases for future years on general terms, while APA provides tax certainty on case-to-case basis not only for future years but also rollback years. Both SHR and the APA have been successful in reducing litigation in determination of the ALP.

In order to provide certainty, section 92CB and section 92CC are proposed to be amended w.e.f. A.Y.2020-21, to include within its scope, determination of **income attributable to operations carried out in India by or on behalf of a non-resident for attracting deemed accrual provisions under section 9(1)(i).**

## **Purpose of entering into DTAAs to be aligned with Multilateral Instrument (MLI)**

India has signed the Multilateral Convention to implement Tax Treaty Related Measures to Prevent Base Erosion and Profit Shifting (commonly referred to as MLI) along with representatives of many countries, which has since been ratified. India has since deposited the Instrument of Ratification to OECD, Paris along with its Final Position in terms of Covered Tax Agreements (CTAs), Reservations, Options and Notifications under the MLI, as a result of which MLI has entered into force for India on 1<sup>st</sup> October, 2019 and its provisions will be applicable on India's DTAAs from FY 2020-21 onwards.

The MLI will modify India's DTAAs to curb revenue loss through treaty abuse and base erosion and profit shifting strategies by ensuring that profits are taxed where substantive economic activities generating the profits are carried out. The MLI will be applied alongside existing DTAAs, modifying their application in order to implement the BEPS measures.

Therefore, section 90(1) is proposed to be amended w.e.f. A.Y.2021-22 so as to provide that the Central Government may enter into an agreement with the Government of any country outside India or specified territory outside India for, inter alia, the avoidance of double taxation of income under the Act and under the corresponding law in force in that country or specified territory, as the case may be, **without creating opportunities for non-taxation or reduced taxation through tax evasion or avoidance (including through treaty-shopping arrangements aimed at obtaining reliefs provided in this agreement for the indirect benefit of residents of any other country or territory).** Similar amendment is also proposed in section 90A(1) w.e.f. A.Y.2021-22.

## **Applicability of Significant Economic Presence (SEP) deferred**

*Explanation 2A* was inserted in section 9(1)(i) by the Finance Act, 2018 to provide that "Significant Economic Presence" of a non-resident in India would constitute business connection in India for attracting deemed accrual provisions under section 9(1)(i). SEP was defined thereunder and the threshold limits for aggregate payments from specified transactions and number of users were to be prescribed by way of Rules. Till date, no Rules have been prescribed in this regard, since the **G20-OECD report is awaited**. Accordingly, it is proposed to **defer the applicability of SEP to commence from A.Y. 2022-23.**

## **Source rule extended: Specific inclusions in "Income attributable to operations carried out in India"**

Clause (a) of *Explanation 1* to section 9(1)(i) provides that in the case of a business of which all operations are not carried out in India, the income of the business deemed to accrue or arise in India shall only be such part of the income as is reasonably

attributable to the operations carried out in India.

*Explanation 3A* is proposed to be inserted below section 9(1) w.e.f. A.Y.2021-22 to provide that **income attributable to the operations carried out in India would include** –

- (i) income from **advertisement targeting Indian customers;**
- (ii) income from **sale of data collected from India;** and
- (iii) income from **sale of goods and services using such data collected from India.**

### **Scope of definition of “royalty” under section 9 expanded**

Section 9(1)(vi) deems certain income by way of royalty to accrue or arise in India. Explanation 2 of the said clause defines the term “royalty” to mean consideration for, inter alia, the transfer of all or any rights (including the granting of a licence) in respect of any copyright, literary, artistic or scientific work including films or video tapes for use in connection with television or tapes for use in connection with radio broadcasting, but not including consideration for the sale, distribution or exhibition of cinematographic films.

On account exclusion of consideration for the sale, distribution or exhibition of cinematographic films from the scope of “royalty”, such royalty is not taxable in India even if the DTAA gives India the right to tax such royalty. Such a situation is discriminatory against Indian residents, since India is forgoing its right to tax royalty in case of a non-resident from another country without that other country offering similar concession to Indian residents.

Hence, the definition of “royalty” is proposed to be amended so as not to exclude consideration for the sale, distribution or exhibition of cinematographic films from its scope. Hence, w.e.f. A.Y.2021-22, **consideration received by a non-resident for sale, distribution or exhibition of cinematographic films would be included within the definition of royalty and hence, would be deemed to accrue or arise in India.** Accordingly, the same would be taxable in India.

### **Other Significant Proposals**

#### **Transparency in survey**

Section 133A empowers an income-tax authority as defined therein to conduct survey at the business premises of the assessee under his jurisdiction. Section 133A proposed to be amended with effect from 1<sup>st</sup> April, 2020 to provide that in a case where the information has been received from the prescribed authority, then, prior approval of the Joint Director or the Joint Commissioner is required for conducting survey. If the survey is not based on information provided by the prescribed authority, then, prior approval of Director or Commissioner of Income-tax is required for conducting survey.

#### **Taxpayer’s Charter**

New section 119A proposed to be inserted w.e.f. 1<sup>st</sup> April, 2020 to empower the CBDT to adopt and declare a Taxpayer’s Charter and issue necessary orders, instructions, directions or guidelines for the implementation of the Charter.

## SIGNIFICANT INDIRECT TAX PROPOSALS IN THE FINANCE BILL, 2020

### GOODS AND SERVICES TAX

#### **Amendments proposed in the CGST Act, 2017**

##### **Effective from a date to be notified**

- ◆ The definition of Union Territory in clause (114) of section 2 is proposed to be amended to give effect to the reorganization of State of Jammu and Kashmir into Union Territory of Jammu and Kashmir and Union Territory of Ladakh and to the merger of Union Territory of Dadra and Nagar Haveli and Union Territory of Daman and Diu.
- ◆ Clauses (b), (c) and (d) of section 10(2) are proposed to be amended to exclude a registered person engaged in making:
  - supply of services not leviable to tax,
  - inter-State outward supplies of services,
  - supply of services through an electronic commerce operator who is required to collect tax at source from the ambit of the composition scheme.
- ◆ Section 16(4) to be amended to delink the date of issuance of debit note from the date of issuance of the underlying invoice for the purpose of determining time limit for availing input tax credit in respect of the same.
- ◆ Section 29(1)(c) is proposed to be amended to enable a registered person who has obtained registration voluntarily to apply for cancellation of registration.
- ◆ Proviso to section 30(1) is to be inserted to empower the jurisdictional tax authorities to extend the time-limit for applying for revocation of cancellation of the registration in deserving cases.
- ◆ Proviso to section 31(2) to be substituted to provide enabling provision to prescribe the manner of issuance of

invoices in case of supply of taxable services.

- ◆ Section 51 to be amended to do away with the requirement of issuance of TDS certificate by the deductor; and to omit the corresponding provision of imposition of late fees for delay in issuance of TDS certificate.
- ◆ Section 109 to be amended to bring the provision for Appellate Tribunal under the CGST Act in the Union territory of Jammu and Kashmir and Union Territory of Ladakh.
- ◆ New sub-section (1A) is proposed to be inserted in section 122 to provide a penalty of an amount equivalent to the tax evaded or input tax credit availed of or passed, on the beneficiary of the following transactions:
  - Supply of any goods and/or services without issuance of any invoice or issuance of an incorrect or false invoice with regard to any such supply;
  - Issuance of any invoice/bill without supply in violation of the provisions of the Act or the rules made thereunder;
  - Taking or utilising input tax credit without actual receipt of goods and/or services either fully or partially, in contravention of the provisions of the Act or the rules made thereunder;
  - Taking or distributing input tax credit in contravention of section 20, or the rules made thereunder.
- ◆ Section 132 to be amended to make the offence of fraudulent availment of input tax credit without an invoice or bill a cognizable and non-bailable offence; and to make

# UNION BUDGET 2020-21

any person who commits, or causes the commission, or retains the benefit of transactions arising out of specified offences liable for punishment.

- ◆ Section 172 is proposed to be amended to enable the issuance of removal of difficulty order till the expiry of a period of 5 years from the date of commencement of the CGST Act as against earlier 2 years. Similar amendment is also proposed in the IGST Act, 2017.

## Effective from 01.07.2017

- ◆ Para 4(a) and 4(b) of Schedule II to the CGST Act proposed to be amended to make provision for omission of supplies relating to transfer of business assets made without any consideration from Schedule II of the said Act.

## CUSTOMS

### Amendments proposed in the Customs Act, 1962

#### Effective from the date of enactment of the Finance Bill

- ◆ For the purpose of improving compliance, a new Chapter VAA (new section 28DA) is proposed to be introduced so as to provide for administration of rules of origin under a trade agreement and to lay down procedure regarding claim of preferential rate of duty on goods imported under a trade agreement entered into between the Government of India and the Government of a foreign country or territory or economic union. Further, section 111 is also proposed to be amended so as to provide for confiscation of goods imported on a claim of preferential rate of duty in contravention of the provisions of this newly proposed chapter. Central Government is also to be empowered to make rules providing for the form, time limit, manner, circumstances, conditions, restrictions and other matters for carrying out the provisions of the newly proposed chapter, by proposed amendment in section 156.
- ◆ A new section 51B is proposed to be inserted so as to provide for creation of an electronic duty credit ledger in the customs automated system and manner of its utilisation. This will enable duty credit in lieu of duty remission to be given in respect of exports or other such benefit in electronic form for its usage transfer, etc. The provision for recovery of duty provided under section 28AAA is proposed to be expanded to include such electronic credit of duties. In this regard, section 157 is proposed to be amended to empower the Board to make regulations for the manner of maintaining electronic duty credit ledger, making payment therefrom, transfer of duty credit from ledger of one person to another person's ledger and the conditions, restrictions and the time limit relating thereto.
- ◆ Section 11(2)(f) is proposed to be amended so as to include any other goods along with gold/silver to enable the Central Government to prohibit either absolutely or conditionally the import or export of such goods to prevent injury to the economy on account of uncontrolled import or export of such goods.

### Amendment proposed in the Customs Tariff Act, 1975

#### Effective from the date of enactment of the Finance Bill

- ◆ Section 8B providing for imposition of safeguard duty is to be amended so as to empower the Central Government to apply safeguard measures including Tariff Rate Quota to curb increased quantity of imports of an article to prevent serious injury to domestic industry.

## Form-IV (See Rule 8)

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I, CA. Vandana D Nagpal, hereby declare that the particulars given above are true to the best of my knowledge and belief.

Dated: February 26, 2020

Sd/-

Signature of Publisher

### Corrigendum in respect of Announcement of May 2020 Examination in February, 2020 of CA Student Journal

Schedule of Final Course (New) printed for  
Group I as – 2nd, 4th, 6th, 9th May 2020  
Group II as – 9nd, 13th, 15th, 17th November 2019

Following corrections need to be made regarding above mistakes:

1. 1<sup>st</sup> paper of Group II would be on 11th
2. Month is to change to May 2020 instead of November 2019 as now mentioned for Group II

Inconvenience caused in this respect is regretted.

Director, Board of Studies



ICAI President CA. Atul Kumar Gupta along with Central Council Members CA. Hans Raj Chugh and CA. Pramod Jain during Interaction with Students in Jammu. ICAI Past President CA. Prafulla P. Chhajed with Members at the Annual Function.

**TOPPERS OF CHARTERED ACCOUNTANTS FOUNDATION EXAMINATION NOVEMBER-2019**



**All India Topper First Rank**  
SAINA AGRAWAL  
Kalahandi



**All India Second Rank**  
AKSHA MOHAMMED FARUK  
MEMON  
Ahmedabad



**All India Second Rank**  
SAMEER  
Rohtak



**All India Third Rank**  
SHUBHAM BHAGWAN  
TAPARIA  
Satara

**TOPPERS OF CHARTERED ACCOUNTANTS INTERMEDIATE (IPC) EXAMINATION HELD IN NOVEMBER-2019**



**All India Topper First Rank**  
ARDHRA RAMESH  
Bangalore



**All India Second Rank**  
GOKUL KRISHNA V B  
Muvattupuzha



**All India Third Rank**  
AAKASH KACHHAL  
New Delhi

**TOPPERS OF CHARTERED ACCOUNTANTS INTERMEDIATE EXAMINATION HELD IN NOVEMBER-2019**



**All India Topper First Rank**  
AKSHAY JAIN  
Ahmedabad



**All India Second Rank**  
HARSH CHOUDHARY  
New Delhi



**All India Third Rank**  
RITIK KHAITAN  
Konnagar

## CROSSWORD - MARCH 2020

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## ACROSS

- A metric used in capital budgeting to estimate the profitability of potential investments.
- Partner is personally liable to liabilities of LLP in case of \_\_\_\_\_
- The total value of all goods and services produced by a country in one year.
- A research of near-death experience.
- An armed force formed in 1942 in South Asia during II world war.
- Unhappy
- \_\_\_\_\_ India limited is the second largest hydrocarbon exploration and production company.
- A Malaysian wholly owned company under the minister of finance incorporated.
- A fixed payment amount made by a borrower at specific date.
- Listed company should have at least \_\_\_\_\_ woman director.
- To renew
- Wrath
- A stock market speculator
- An intellectual or developmental disability also called \_\_\_\_\_.
- From A.Y.2021-22, the minimum period of stay for an Indian citizen who comes on a visit to India to become \_\_\_\_\_ in India is proposed to be reduced to 120 days.
- The part of a computer that controls all the other parts of the system.
- Crumble
- Imitate
- To shine
- A natural fibre extracted from the outer husk of coconut.
- Reason
- Ergonomics ear speaker
- \_\_\_\_\_ powder used to absorb moisture and reduce friction to help prevent rashes and skin irritation.
- Provisions of Indian Partnership Act will not apply to \_\_\_\_\_
- Indian currency code
- An American computer hardware company
- A low stage
- In case of non-government company, on failure of board to appoint first auditor, members shall appoint such auditor within \_\_\_\_\_ days at an EGM.

- A domestic company would not be liable to pay \_\_\_\_\_ on dividend distribution by it on or after 01.04.2020.
- The system of certification of origin of goods that applies in the GSP of the European Union since 1st Jan'17.
- India's internal intelligent agency
- The symbol used to show the ratio of circumference of a circle to its diameter.
- A compiled programming language
- Fraudulent availment of input tax credit without an invoice/bill is proposed to be made a \_\_\_\_\_ and non-bailable offence vide the Finance Bill, 2020.

## DOWNWARD

- Every company shall have a Board Directors consisting of \_\_\_\_\_
- An India company which is engaged in the business of multi brand retail trading.
- Purpose
- Ctrl + Z
- \_\_\_\_\_ and Goliath, means used to describe situation in which a small organisation tries to defeat another much large.
- \_\_\_\_\_ theory is a study of mathematical strategic interaction among rational decision-makers.
- Not any
- \_\_\_\_\_ Non (No work, No Pay)
- A registered person engaged in making supply of \_\_\_\_\_ not leviable to tax is proposed to be excluded from the ambit of composition scheme vide the Finance Bill, 2020.
- With effect from 1.4.2020, a seller of an \_\_\_\_\_ tour package would be required to collect tax at source@5% on the amount received from the buyer who purchases the package.
- \_\_\_\_\_ dicta is a judge-made law.
- \_\_\_\_\_ generation companies would also be eligible opt to pay tax@15% under section 115BAB.
- An offer by a company to pay amount
- \_\_\_\_\_ Used to request a credit entry for an item(s) that was listed and included in a paper cash/return letter total, but the physical item(s) was not received.
- A final part
- The requirement of issuance of \_\_\_\_\_

certificate under GST is proposed to be done away with vide the Finance Bill, 2020.

- One of the world's largest and most diversified testing services provider agency
- Demure
- \_\_\_\_\_ system, Inc. is an American multinational software company that provides server, networking and desktop virtualisation.
- A web anime that is directly released onto the Internet in Japan.
- A High-level programming language
- Unit of length
- A \*nix utility that prints the shared libraries required by each program of shared library specified on the command line.
- An instinctive mental capacity which enables an infant to acquire and produce language.
- An area of the trading floor, designated for the buying and selling of a particular type of security through the open outcry system.
- A negotiable instrument similar to a bill of exchange.
- An American supernatural drama television series
- Central bank which controls the issue and supply of the Indian rupee.
- Prefix, used before noun, adjective and adverbs
- \_\_\_\_\_ Ratio is another way to evaluate the value of a stock.

If undelivered, please return to: The Institute of Chartered Accountants of India, ICAI Bhawan, Indraprastha Marg, New Delhi-110104