

2020

August
VOL: 5, NO.: 8,

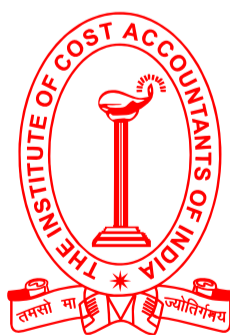
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CMA Student E - Bulletin

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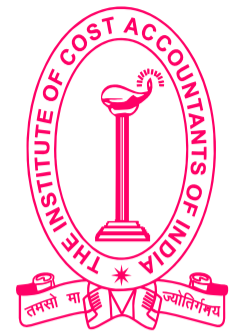
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Behind every successful business decision, there is always a CMA

Message from The Chairman

CMA Biswarup Basu

Vice President & Chairman,
Training & Education Facilities
and Placement Committee



MESSAGE FROM THE CHAIRMAN



Dear Students,
Greetings!!

"It is easy to stand in the crowd but it takes courage to stand alone" - M.K. Gandhi.

The world after the wave of COVID-19 must be more inclusive, resilient, and sustainable. Today, we live in a world in which inequality between and within countries has grown as a result of businesses' race to the bottom and working poverty among a vast portion of the global workforce. Too many countries suffered the external shocks of COVID-19 without universal social protection, robust public health systems, a plan to reach net-zero carbon emissions by 2050, or a sustainable real economy with quality jobs. Towards this end, our Institute is also taking initiatives to make our students more Globally acceptable.

The Directorate of Studies is working diligently to provide the students with all possible supports and guidance. Live Webinars are being conducted, recorded webinars are also there in the e-library. Answers to the Mock Test Papers (MTPs), updated Work Books, and monthly E-bulletins are uploaded on our website as per the pre-scheduled manner. Eminent academicians and professionals are contributing in their own way to the development of our students despite the odd situation faced by everybody.

Being the Chairman of the Training & Educational Facilities and Placement Committee, I am really thankful to all of them. So, don't give up hope, carry on with your exercises, and try to utilize the facilities and opportunities being offered by the Directorate of Studies.

Foundation Examination of the students will be conducted on 6th September 2020 in online mode only and I wish all the examinees will appear with much confidence, as the unique and exclusive Online Mock Test Platform for CMA Students has been developed and made live by the Directorate of Studies to provide required practice sessions to the students through this portal: https://eicmai.in/MCQ_Portal/login.aspx; as per our records more than 40,000 online mock test examinations have already been conducted through this online platform so far.

Our 'Students' Connect' section is there for the convenience of all our students [<https://icmai.in/studentswebsite/Students-E-Services.php>].

Recently we have thoroughly revamped our 'Students' Portal' to make it robust, up-to-date and students friendly. Your valuable feedback is always solicited.

We have also introduced World Class Training facilities for the Intermediate Students with SAP Certification, Microsoft Certification, Cambridge University Certification and E-Filing to groom and train them as future-ready professionals.

Self-reliance and confidence is the need of the hour; keep faith for a bright and sparkling future to come.

Always keep in mind that, **"Strength is Life, Weakness is Death. Expansion is Life, Contraction is Death. Love is Life, Hatred is Death."** - Swami Vivekananda

Best wishes as always,

CMA Biswarup Basu
Chairman, Training & Education Facilities and Placement Committee

Be a CMA, be a Proud Indian

Stay Home
Stay Safe

Behind every successful business decision, there is always a **CMA**



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KNOWLEDGE Update



In this section of e-bulletin we shall have a series of discussion on each of these chapters to provide a meaningful assistance to the students in preparing themselves for the examination at the short end and equip them with sufficient knowledge to deal with real life complications at the long end.



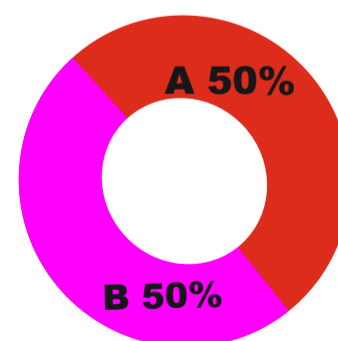
PAPER: 1, PART: I

FUNDAMENTALS

OF ECONOMICS & MANAGEMENT
(FEM) - ECONOMICS

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Your Preparation Quick Takes



Syllabus Structure

A Fundamentals of Economics 50%
B Fundamentals of Management 50%

Learning Objectives:

- Studying economics, one will be able to develop the analytical skills needed to work successfully in the field, including the study of logical analysis.
- Students will be able to identify and explain economic concepts and theories related to the behaviour of economic agents, markets, industry and firm structures, legal institutions, social norms, and government policies.
- Students will be able to integrate theoretical knowledge with quantitative and qualitative evidence in order to explain past economic events and to formulate predictions on future ones.
- Students will be able to evaluate the consequences of economic activities and institutions for individual and social welfare.

Economics

Hi friends! Hope you people are enjoying the unlocked period. But please do not freak out all the time. Since you have enough time at your disposal, you can go through the study material thoroughly if you want to score high marks in the exam. We will practice mock tests as usual.

MOCK TEST

I. Choose the correct answer:

1. What is the function of the market?
 - A. To determine the price of the goods
 - B. To determine the quantity of the goods to be supplied.
 - C. Both A and B
 - D. None of the above
2. How welfare can be increased in a country?
 - A. By increasing the national income of the country
 - B. By creating more wealth in the country
 - C. By the even distribution of income and wealth among the countrymen
 - D. None of the above
3. Which one of the following is investment?
 - A. Purchasing a second hand automobile
 - B. Purchasing an existing share from another share holder
 - C. Purchasing a new share floated by a company
 - D. None of the above
4. Which one of the following is the aggregate demand of a country?
 - A. C+S
 - B. C+I
 - C. C+I+S
 - D. None of the above
5. Consumer surplus is calculated with the following formula:
 - A. Willing price - Actual price
 - B. Supply price - Actual price
 - C. Supply price - Demand price
 - D. None of the above
6. Which one of the following is not a determinant of demand?
 - A. Price of the good
 - B. Income of the consumer
 - C. Price of the substitute
 - D. Price of the raw material
7. If the cross elasticity of demand is negative, the two commodities will be :
 - A. Substitutes
 - B. Complements
 - C. Normal

- D. Unrelated
8. If the demand and supply both increase due to parametric change, and supply increases more than the demand, then the equilibrium
- Price and quantity both increase
 - Price and quantity both fall
 - Price rises and quantity falls
 - Price falls and quantity rises
9. Profit maximising condition for the firm is
- $AC=AR$ and AC curve cuts the AR curve from below
 - $MC=MR$ and MC curve cuts the MR curve from above
 - $MC=MR$ and MC curve cuts the MR curve from below
 - $AC=AR$ and AC curve cuts the AR curve from above
10. In a monopolistic market
- The supply curve is upward rising
 - The supply curve is downward falling
 - There is no supply curve
 - None of the above is true

KEY: 1. C, 2. C, 3. C, 4. B, 5. A, 6. D, 7. B, 8. D, 9. C, 10. C

II. Fill in the blanks

- According to Adam Smith invisible hand is also called
- Central bank enjoys the exclusive power of issue
- ICICI is a sector bank
- According to Fisher's theory money is demanded for purpose
- Money serves as a medium of

KEY: 1. Price System, 2. Note, 3. Private, 4. Transaction, 5. Exchange

III. True or False:

- During inflation period, the lenders of money will lose
- Unit Trust of India was established to mobilise the savings of the relatively small investors
- Cash reserve ratio cannot control the credit creation
- The rate at which funds are borrowed and lent among the commercial banks in the call and notice market is called 'Bank rate'
- Treasury bills are short term promissory notes issued by the GOI at a discount generally for a period of 91 days

KEY: 1. True 2. True 3. False 4. False 5. True

IV. Matching:

1. Certificate of Deposits scheme	A. NABARD
2. Interdependence	B. Quota
3. IMF	C. Demand curve
4. Agricultural credit	D. RBI
5. Substitution effect	E. Oligopoly

KEY: 1. D, 2. E, 3. B, 4. A, 5. C

Friends hope you have enjoyed solving the tricky questions in the mock test. Please for heaven's sake do not consult the key before hand. The rule of the mock test is that you have to solve the entire paper yourself honestly as you do in the exam hall. After that you check the answer script with the help of the key as the examiner does. If you follow this method religiously then only you will be able to know how well you are prepared for the exam. You may store the results of the mock tests and compare them to find out your improvement. Wish you all the best !!!



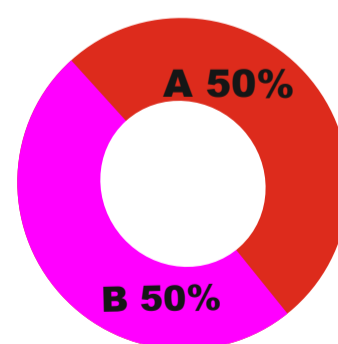
PAPER: 1, PART: II

FUNDAMENTALS

OF ECONOMICS & MANAGEMENT
(FEM) - MANAGEMENT

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Your Preparation Quick Takes



Syllabus Structure

A Fundamentals of Economics 50%
B Fundamentals of Management 50%

Learning Objectives:

- Students will demonstrate their knowledge of business and management principles
- Students will reveal effective written and oral communication
- Students will exhibit an awareness of the global environment in which businesses operate
- Students will display the ability to recognize when change is needed, adapt to change as it occurs, and lead

MANAGEMENT

- The practice of Management is written by-----
A. Peter F Drucker
B. Terry
C. Louis Allan
D. Hendry Fayol
- Management is what a manager does-----
A. Peter F Drucker
B. Terry
C. Louis Allan
D. Hendry Fayol
- The first woman authority in Management is-----
A. Mary Parkett
B. Lillian Gilberth
C. White Head
D. Elton Mayo
- To manage is to forecast or plan, to organize, to compound, to coordinate and to control. This definition was given by-----
A. Peter F Drucker
B. Hendry Fay
C. Louis Allan
D. Terry
- The first man who advocated the view that the management should and can be taught is-----
A. Harold Koontz
B. Terry
C. Louis Allan
D. Hendry Fayol
- The orders, instructions or directions are delegated to a particular person specifically is known as-----
A. general delegation
B. formal delegation
C. specific delegation
D. informal delegation
- Goal or target to be achieved is known as-----
A. schedule
B. Budget
C. procedures
D. objective
- Penalty is levied for violation of-----
A. Procedures
B. Rules
C. policy
D. methods
- Specifying the manner of executing policy is known as-----
A. objective
B. schedules
C. procedures
D. budgets
- Motivation means a process of stimulating people to action to accomplish desired goals is set by-----
A. Owen
B. Scott
C. Shartle
D. Flippo

11. Motivation available only after completion of job is-----
A. Negative motivation
B. Positive motivation
C. Extrinsic motivation
D. Intrinsic motivation
12. Person who receives the message is called-----
A. Sender
B. Receiver
C. Encoding
D. Decoding
13. Motivation available at the time of performance of work is -----
A. negative motivation
B. positive motivation
C. extrinsic motivation
D. intrinsic motivation
14. The management function which regulates the activities-----
A. co-ordination
B. control
C. direction
D. planning
15. Cost volume profit analysis is otherwise called as-----
A. budgeting techniques
B. statistical controls
C. break even analysis
D. cost control
16. A statement which reflects future incomes and expenditure is-----
A. Profit and loss
B. Budget
C. Balance sheet
D. Cash account
17. Plans, policies and procedures are the functions of -----
A. Top level management
B. Middle level and bottom level management
C. Middle level management
D. Bottom level management
18. A structure of relationship is known as-----
A. Organization
B. Functions
C. Team
D. Group effort
19. The extent to which power and authority are retained at the top is called as-----
A. centralization
B. decentralization
C. responsibility
D. accountability
20. Passing of authority to make decisions to the lowest possible level in the organizational hierarchy is known as-----
A. accountability
B. responsibility
C. decentralization
D. authority

"If your actions inspire others to dream more, learn more, do more and become more, you are a leader".

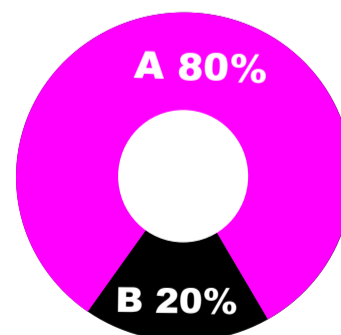


PAPER: 2

FUNDAMENTALS OF ACCOUNTING (FOA)

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Your Preparation Quick Takes



Syllabus Structure

- A Fundamentals of Financial Accounting 80%
- B Fundamental of Cost Accounting 20%

Learning Objectives:

In order to internalize the concepts of subjects like accountancy one has to have an understanding of the learning objectives of the chapters. Try to go through the Statement of Objects and Reasons issued for every topics as it would give you a background to your study.

SOME BASIC CONCEPTS AND OPENING AND CLOSING ENTRIES

INTRODUCTION**A. OPENING ENTRY**

When a new business is commenced the assets and liabilities brought into the business are to be incorporated in the books of accounts by passing an opening entry through the general journal by debiting the assets and crediting the liabilities brought in. The excess of assets over the liabilities is transferred to the capital account. Actually a business started with the capital is the liability of the business towards the businessman. If Mr Sumit starts a business with rupees 10 lacs as capital and name of the business is 'Sumit and Company' then rupees 10 lacs is the liability of Sumit and Company to Mr Sumit.

In case of a continuing business also opening entry is necessary for the commencement of the new accounting period. All the accounts that are closed during the end of the accounting period are to be re opened at the beginning of the fresh accounting period.

If a firm maintaining accounts under single entry system, thinks to convert its accounting process from single entry to double entry in that case also an opening entry is required on the date of such conversion.

The opening entry is passed by debiting all the assets of the company shown on the balance sheet and crediting all liabilities including capital. **If the amount of Capital is not given, then this can be determined by accounting equation:**

Assets = Liabilities + Capital or

Capital = Assets - Liabilities

B. CLOSING ENTRY

At the end of each accounting period the revenue and expense accounts are transferred to trading and profit and loss account in order to find out the financial results during that accounting period. This is carried out through journal entries. These entries are known as closing entries.

In order to close the revenue expense account normally trading and profit and loss account is debited and the respective expenses accounts are credited. Alternatively for the revenue incomes the respective income account is debited and profit and loss account is credited.

Normally the following items are taken care of, through the trading account:

Opening stock of goods, purchase less returns, Productive wages, Carriage inwards, other direct expenses, sales and closing stock of goods.

The difference in the trading account is transferred to Gross Profit or Gross Loss depending on the situation. If revenue is higher than expenses the result is a gross profit and alternatively if revenue is less than expenses the difference is gross loss.

Other operating expenses are entered by debiting profit and loss account and crediting the expense account. Other operating incomes are entered by debiting the income and crediting the profit and loss account. The difference is considered to be the net profit which is ultimately transferred to Capital Account.

The profit and loss account contains on the credit side the gross profit shown by the trading account and indirect revenues such as interest on investments, rent received, commission received, discount received etc., and on the debit side all the indirect expenses incurred in carrying on the business such as rent paid, salaries, general expenses, bad debts, discount allowed, interest paid, depreciation etc. The difference between the two sides of the profit and loss account represents net profit (or net loss) and is transferred to the credit (or debit) of capital account of the trader. In case of a partnership firm or limited company, net profit or net loss is transferred to profit and loss appropriation account.

Example 1. OPENING ENTRY

On 1st January, 2019, Imperial Plc's assets and liabilities are:

Assets: Cash in Hand Rs. 6,000, Cash at Bank Rs. 17,000, Stock Rs. 3,000, Account Receivable Rs. 7,000; Building Rs. 500,000, Investment Rs. 35,000; Furniture Rs. 40,000.

Liabilities: Accounts Payable 50,000, Loan A/c Rs. 130,000

Pass on Opening Journal Entry.

Solution :

Date	Particulars	L.F	Debit	Credit
	Cash in hand A/c DR... 6,000			
	Cash at Bank A/c DR... 17,000			
	Stock A/c.....DR... 3,000			
	Account receivable A/c... DR... 7,000			
	Building A/c..... DR... 500,000			
	Investment A/c..... DR... 35,000		608,000	
	Furniture A/c DR ... 40,000			
	To, Accounts PayableCR..... 50,000			
	Loan A/cCR 130,000			608,000
	Capital A/c (Balance) CR ... 428,000			
	Being Opening Assets and Liabilities are transferred to new Ledger.			

Example no. 2 OPENING ENTRY

Balance sheet year ending 31/03/2017 shown the following balances post it to next financial year:

Closing Balances of Assets are

1. Furniture & Fixture = 50,000/-
2. Plant & machine = 2,50,000/-
3. Land & Building = 25,00,000/-
4. Vehicle = 3,30,000/-
5. Copyright = 50,000
6. Debtors = 80,000/-
7. Cash = 35,000/-
8. Bank = 2,75,000/-

Closing Balances of Capital and liabilities are

1. Capital = 9,90,000/-
2. Bank loan A/c = 15,00,000/-
3. Mortgage Loan = 10,00,000/-
4. Creditors = 80,000/-

Journal entry will be posted as shown below:

Date	Particulars	L.F	Debit	Credit
	Cash in hand A/c DR... 35000			
	Cash at Bank A/c DR... 275000			
	Vehicles..... DR 330000			
	Copyright..... DR 50000			
	Plant and Machinery..... DR 250000			
	Stock A/c.....DR...			
	Account receivable A/c... DR... 80000			
	Building A/c..... DR... 2500000		3570000	
	Furniture A/c DR ... 50000			
	To, Accounts PayableCR 80000			
	Mortgage Loan.....CR 1000000			3570000
	Loan A/cCR 1500000			
	Capital A/c (Balance) CR 990000			
	Being Opening Assets and Liabilities are transferred to new Ledger.			

Example : 3 CLOSING ENTRY (TRY YOURSELF)

The following balances are extracted from the books of a trader as on 31st December, 2014 : Capital 30,000; Building 31,200 ; Bank overdraft 5,000 ; Cash in hand 1,360; Stock-in-trade (1.1.14) 12,000; Purchases 14,400 ; Interest received 740 ; Sales 34,000 ; Returns outward 2,000 ; Carriage inward 500 ; Wages 2,500 ; Returns inward 1,500 ; Salaries 1,400 ; Advertising 420 ; Rates and taxes 320; Insurance premium 80; Discount allowed 600; Repairs to building 420 ; Discount received 1,000; Debtors 13,240; Creditors 8,200; General expenses 1,000. Stock-in-trade on 31.12.14 was valued at 11,200.

Draft the closing journal entries.

Now try solving the following questions:

Write your options first and then tally your answer -

Question 1

Accounting furnishes data on

- A) Income and cost for the managers
- B) Financial conditions of the institutions
- C) Company's tax liability for a particular year
- D) All the above

Answer:

Question 2

Long term assets having no physical existence but, possessing a value is called as

- A) Intangible assets
- B) Fixed assets
- C) Current assets
- D) Investments

Answer:

Question 3

The assets that can be easily converted into cash within a short period (i.e., 1 year or less is known as

- A) Current assets
- B) Fixed assets
- C) Intangible assets
- D) Investments

Answer:

Question 4

Copyrights, Patents and Trademarks are,

- A) Current assets
- B) Fixed assets
- C) Intangible assets
- D) Investments

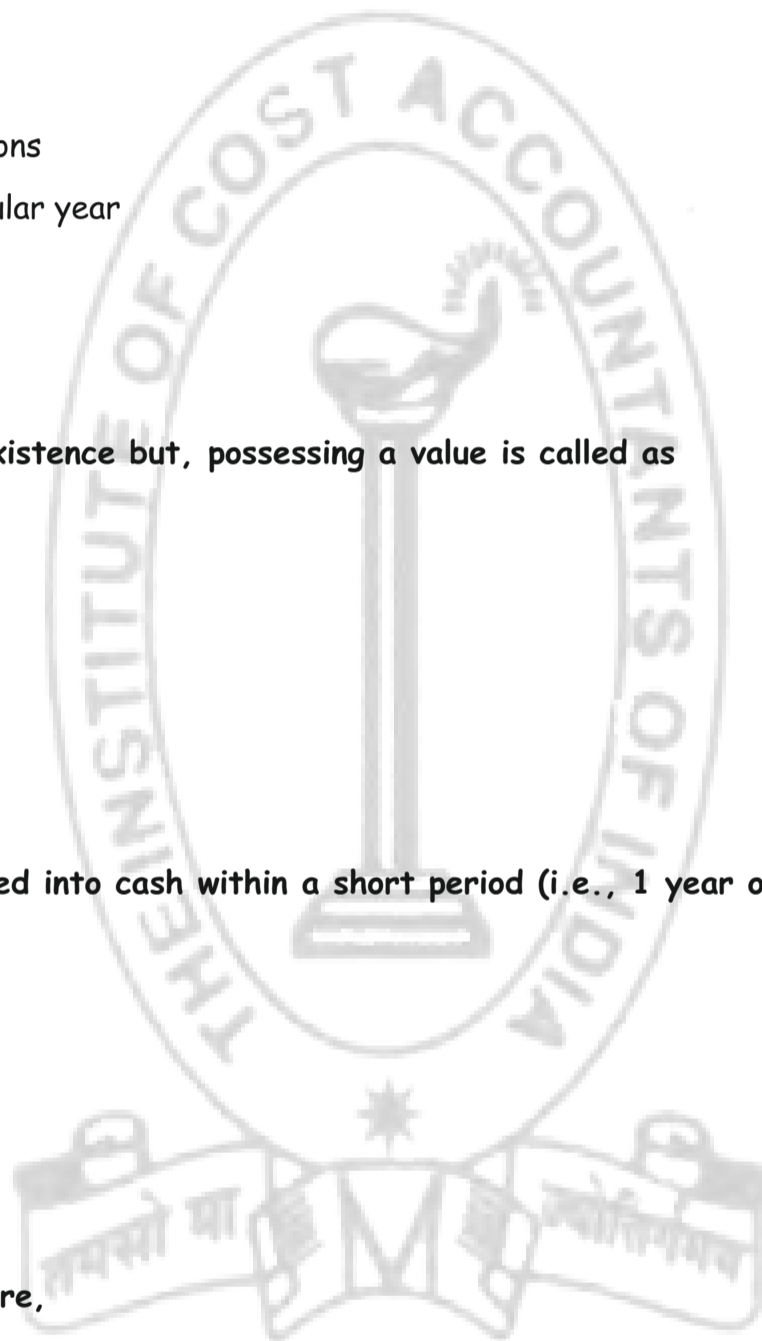
Answer:

Question 5

The debts which are to be repaid within a short period (a year or less) are referred to as,

- A) Current Liabilities
- B) Fixed liabilities
- C) Contingent liabilities
- D) All the above

Answer:



Question 6**Gross profit is**

- A) Cost of goods sold + Opening stock
- B) Excess of sales over cost of goods sold
- C) Sales fewer Purchases
- D) Net profit fewer expenses of the period

Answer:**Question 7****Net profit is computed in the**

- A) Profit and loss account
- B) Balance sheet
- C) Trial balance
- D) Trading account

Answer:**Question 8****In order to find out the value of the closing stock during the end of the financial year we,**

- A) do this by stocktaking
- B) deduct the cost of goods sold from sales
- C) deduct opening stock from the cost of goods sold
- D) look in the stock account

Answer:**Question 9****Which of these best explains fixed assets?**

- A) Are bought to be used in the business
- B) Are expensive items bought for the business
- C) Are items which will not wear out quickly
- D) Are of long life and are not purchased specifically for resale

Answer:**Question 10****The charges of placing commodities into a saleable condition should be charged to**

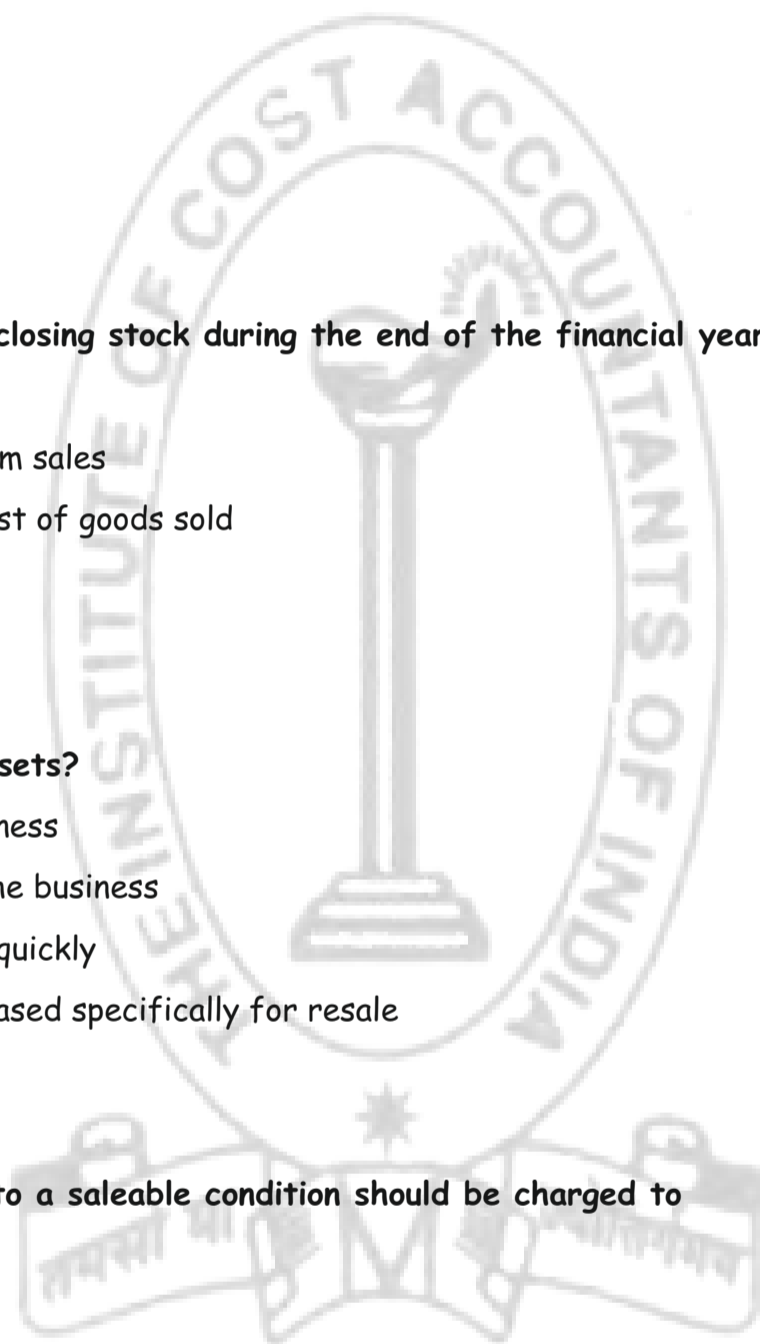
- A) Trading account
- B) P & L a/c
- C) Balance Sheet
- D) None of the above

Answer:**Question 11****Suppliers personal a/c are seen in the**

- A) Sales Ledger
- B) Nominal ledger
- C) Purchases Ledger
- D) General Ledger

Answer:**Question 12****If you want to ensure that your money will be secured if Cheques sent are wasted in the post, you should**

- A) Always pay by cash



- B) Cross your Cheques ' Account Payee only, Not Negotiable'
- C) Always get the money in person
- D) Not use the postal service in future

Answer:

Question 13

Discounts received are

- A) Deducted by us when we pay our accounts
- B) Deducted when we receive cash
- C) Given by us when we sell goods on credit
- D) None of these

Answer:

Question 14

Sales invoices are first entered in

- A) The Cash Book
- B) The Purchases Journal
- C) The Sales Journal
- D) The Sales Account

Answer:

Question 15

Entered in the Purchases Journal are

- A) Discounts received
- B) Purchases invoices
- C) Payments to suppliers
- D) Trade discounts

Answer:

Question 16

At the balance sheet date, the balance on the Accumulated Provision for Depreciation Account is

- A) Transferred to Depreciation Account
- B) Transferred to the Asset Account
- C) Transferred to Profit and Loss Account
- D) Simply deducted from the asset in the Balance Sheet

Answer:

Question 17

If we take goods for own use we should

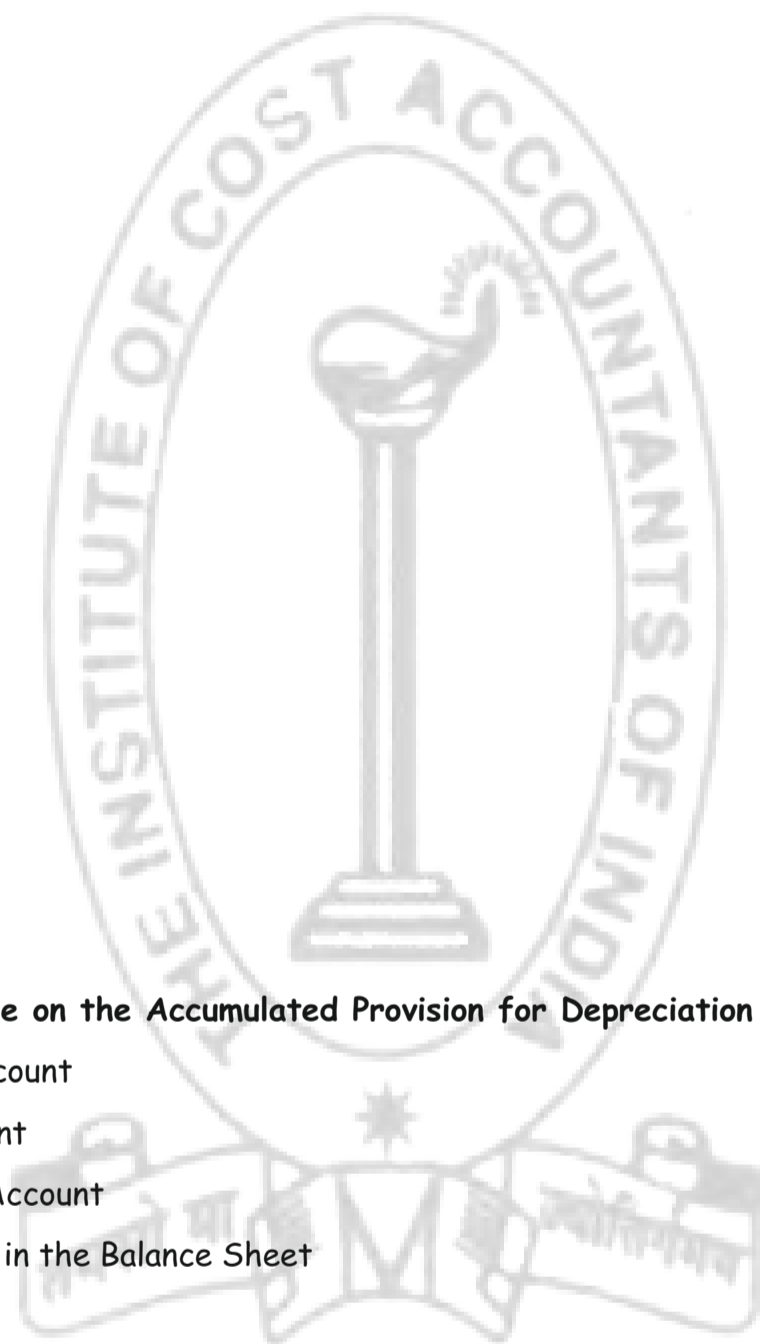
- A) Debit Drawings Account, Credit Purchases Account
- B) Debit Drawings Account: Credit Stock Account
- C) Debit Sales Account: Credit Stock Account
- D) Debit Purchases Account: Credit Drawings Account

Answer:

Question 18

When a petty cash book is kept there will be

- A) No entries made at all in the general ledger for items paid by petty cash
- B) The same number of entries in the general ledger
- C) Fewer entries made in the general ledger
- D) More entries made in the general ledger



Answer:

Question 19

If a trial balance totals do not agree, the difference must be entered in

- A) The Profit and Loss Account
- B) A Nominal Account
- C) The Capital Account
- D) A Suspense Account

Answer:

Question 20

If it is required to maintain fixed capitals then the partners' shares of profits must be

- A) Credited to capital accounts
- B) Debited to capital accounts
- C) Debited to partners' current accounts
- D) Credited to partners' current accounts

Answer:

ANSWERS : 1D, 2 A, 3 A, 4 C, 5 A, 6 B, 7 A, 8 A, 9 D, 10 A, 11 C, 12 B, 13 A, 14 C, 15 B, 16 D, 17 A, 18 C, 19 D, 20 D.



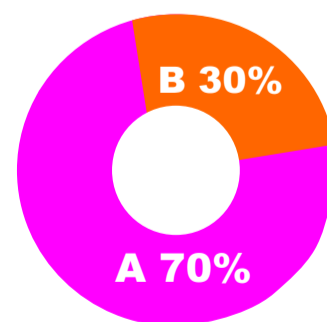


PAPER: 3

FUNDAMENTALS OF LAWS AND ETHICS (FLE)

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Your Preparation Quick Takes



Syllabus Structure

- A Fundamentals of Commercial Laws 70%
- B Fundamentals of Ethics 30%

Learning Objectives:

- Read the Study Material minutely.
- For details or if you don't understand Study Material or the section is important to identify the topic, then refer to Bare Act, otherwise reference to Bare Act is not necessary. For Company Law, book by Avtar Singh is recommended. For other laws Institute Study Material is sufficient.
- The words used in any of the texts as mentioned above should be understood by immediate reference to the Dictionary.
- The main points coming out in any of the provisions should be either underlined or written in separate copy which has to be repeated again and again.
- Theoretical knowledge should be adequate and clear before solving practical problems.
- Don't write wrong English. It changes the meaning and therefore answer may be wrong even when the student's conception is clear. Also don't make spelling mistakes.

LAW & ETHICS

This is a Special message for students intending to take the examination within a few weeks .Here are some tips for all of you :-

How to wind up your studies and get ready to confidently face the examinations -

1. Prepare a time-table with time allotted for each subject - to read, write and revise.
2. For this Law paper, you must have noticed that I always highlight the salient points for the questions raised.
3. Please note down the question and the jot down the main points highlighted by me.
4. Keep revising those points so that you remember those.

On the day of your Law & Ethics Exam :

1. After the question paper is distributed, please take a deep breath and glance at all the questions - the Main questions, the Sub-questions and the short notes.
2. Hold a pencil and on the right margin, mark in which order you intend to attempt the questions first, second and so on.
3. Allot time to each question depending on the marks allotted and do not waste time on small questions even if you know that very well.
4. This is called Time Management. Keep aside time for revision.
5. While attempting a question always try to impress the examiner.
6. Concentrate on good handwriting.
7. Give a Heading to highlight the salient points.
8. Inside the answer, give Bullet Points to impress that you know the answer well.
9. Then if the question demands, enlarge those main points with more emphasis on what the question demands.
10. Never fill up the pages with trash matters.
11. In a long question, start with an introduction and end with a conclusion.

For those students who are not appearing in the ensuing examination, it is hoped that you all keep on reading and recapitulating all that you have read because your exams are also not far away as time just flies.

Now, let us start revising part by part, what we have read in the previous issues.

Ethics : Please remember that Ethics is truly the pillar on which you, - the would-be professionals will be expected by the society and the world-at-large, to stand, during your professional career.

Right from the day an individual is born, the world accepts him/her as a member of a Society, a Clan, a Culture and a Tradition and each of those categories are governed by respective Standards and Ethics. We may therefore, explain that **Ethics are such standards that are consistently followed over the years depending on the philosophy that , that system has been following based on the terms of right, obligations and the benefits derived by the society depending on their geographical location and demographic characteristics.**

It is known that, right after his/her birth, from the day a person, begins to see, hear, understand and realize the customs, beliefs, traditions and culture into which he/she is born, he/she is told to do or not to do something, to speak or not to speak something, to wear or not to wear certain dresses, to eat or not to eat certain foods and vegetables or to behave in a certain manner, etc. However, **we must never be confused but should be able to distinguish between Morals and Ethics.**

It must be appreciated that all *ethical traditions and customs are generally followed based on systematic and scientific reasons depending on how much the individual has bonded and established his relationship within that category where he/she belongs or interacts with*, but such reasons may not be always known to every individual existing within that system. Let us take an example. When you enter or pass through a place where the environment is good, peaceful and congenial, you tend to prolong your stay over there, but in a reverse situation, you will definitely either avoid such place or quickly leave that place. In the former case, the individuals gathered there have not breached their ethics but in the latter case, the ethics have been definitely breached and violated.

That prompts us to raise a question - should ethics be rigid or does it need changes? The answer is that we must remember that *ethics is something which is generally prompted by your conscience. Ethics, helps us to realize what is right and wrong and what we should refrain from doing.* Moreover, since the time- machines keeps ticking and changes are bound to take place depending on situations and circumstances, ethics actually guides us to study and analyze an existing system first before showing the path towards development and fine-tuning of an existing system that needs a change.

Now, let us revise partly, the Sale of Goods Act, 1930

At the very start, let us be clear that **Sale of Goods Act relate to sale and purchase of goods**, but the contract of sale is regulated by the Indian Contracts Act, 1872.

At the very start, we must clear our conception about the following terms - **Goods, Specific Goods, Unascertained goods, Future goods and Contingent goods.**

The immediate question coming to mind is - **What are goods?** It is clarified that **every kind of movable property** is goods but - Actionable Claims and Money are excluded. (All things attached to the earth are not movable and are therefore not goods under the Act. However, standing crops, grass and fruits on trees that can be separated are covered under the definition of movable goods).

So, the question arises - **What are Actionable Claims?** Actionable claims are debt or a claim for money which a person may have from another person, which may be recovered by suit.

So, what is **Money?** Money here simply means legal tender.

Specific Goods are goods that can be clearly identified and recognized

Unspecific Goods are those goods that can be indicated by description but cannot be separately identified. For example, as long as the bags of sugar, kept in a godown for sale, are not identified with any specific buyer, they remain Unspecified Goods. As soon as some bags are brought out, marked, separated and issued to a buyer, they become identifiable and become Specific goods.

Future Goods are goods which have not yet been manufactured or produced or acquired by the seller after entering into a contract of sale. For example, X agrees to sell Apples to Z that he will grow in his orchard in the coming fruit season. Such a contract is for sale of future goods.

Contingent Goods, are goods that can be sold only depending on the happening of an uncertain event, called a **Contingency**. For example, M enters into a contract to sell a particular watch to N if M manages to buy it from C - the current owner of the watch. The watch here is considered - Contingent Goods.

Now, let us revise, partly the Negotiable Instruments Act, 1881

To start with, let us ask ourselves a basic question - **What is a Negotiable Instrument?**

For that we need to understand two things - 1. Meaning of "Negotiable"; and 2. Meaning of "Instrument".

Negotiable means transferable by delivery.

Instrument means a written document. Such written document creates a right in favour for some person.

The written document can be a - a Promissory note, a bill of exchange or a cheque payable either to Order or to the Bearer of such document.

Naturally, the obvious question coming to mind shall now be - **What is a Promissory Note?**

A Promissory Note is not a currency note. It is an instrument (document) in writing which contains unconditional undertaking, duly signed by the maker, **who agrees to pay** a certain sum of money, only to the order of a certain person or to the bearer holding the instrument.

The person signing the instrument is called the **Maker** and the person who will get the money is called the **Payee**.

Next question is - **What is a Bill of Exchange?**

A Bill of Exchange is also an instrument in writing containing an unconditional order, duly signed by the Maker, **directing a certain person to pay** a certain sum of money only to, or to the order of a certain person or to the bearer of the instrument.

The Maker of the Bill of Exchange is called the **Drawer** and the person who is directed to pay is called the **Drawee**. Here, the Payee must present the bill to the Drawee for his acceptance by signing on the bill and thereby signifying his acceptance. After Acceptance, the Drawee becomes the **Acceptor**.

The remaining question is - **what is a Cheque?**

A Cheque is a Bill of Exchange drawn upon a **specified banker** and payable on demand. A cheque can be either a Bearer Cheque or an Order cheque but in both cases, it is **payable on demand**. The Specified banker, named has to pay the cheque, when it is presented to him during official banking/office hours at his office. However, the cheque must be validly drawn and the Drawee must have sufficient funds to his credit in his bank account in order to be duly honoured for payment.

Now let us know the **difference between a Promissory Note and a Bill of Exchange.**

1. In a Promissory Note, there are 2 parties - the **Maker** and the **Payee**

2. In a Bill of Exchange, there are 3 parties - The **Drawer**, the **Drawee** and the **Payee**.
3. In a Promissory Note, there is a **Promise to pay**
4. In a Bill of Exchange, there is an **Order to pay**
5. In a Promissory Note, no acceptance is required but it **has to be signed by the person liable to pay**.
6. A Bill of Exchange (barring exceptions) has to be accepted by the Drawee before it becomes binding on him.
7. **The maker** of a Promissory Note is **Primarily liable** on the instrument ;
8. **The Drawer** of the Bill of Exchange is **liable only when** the Drawee does not accept the instrument or pay the money amount due.
9. In case of a Promissory Note, the **Notice of Dishonour to the Maker is not required** but a **Notice of dishonor is required in case of a Bill of Exchange**, when there is a non-payment or non-acceptance.

So, the next question is **What is a Notice of Dishonour ?**

Please note that when there is a non-payment or non-acceptance of a Bill of Exchange, a notice has to be given to all the persons liable to pay, except the Drawee. Such a notice is called Notice of Dishonour.

At this stage, let us understand the **difference between Bill of Exchange and Cheque :**

1. A **Cheque** is a bill of exchange but it can be **drawn only upon a bank**.
2. A **Bill of Exchange** can be **drawn upon any person including a bank**. Every Bill of Exchange is not a cheque.
3. A Bill of Exchange required acceptance, except under certain circumstances. (The exceptions are - 1. The Bill of Exchange have already been protested because of non-acceptance ; and 2. The presentation of the bill is barred by obstacles caused by superior force without human intervention such as earthquake, tornadoes, hurricane and acts of God.
4. A cheque is always payable on demand
5. A Bill of Exchange may be either payable on demand or after a period of time.
6. The acceptor of a bill of exchange is allowed 3 days of grace to make the payment, after the maturity of the bill
7. The Banker is not allowed any days of grace after being presented for payment
8. The Drawer of the bill is discharged from liability if the bill is not presented to the acceptor for payment at the due time.
9. The drawer of a cheque is discharged from liability only if he suffers damage due to delay in presenting the cheque for payment
10. A banker does not have to give a Notice of Dishonour to the drawer to make him liable to compensate the Payee, if the banker fails to pay a cheque.
11. In case of Bills of Exchange, it is necessary to give Notice of Dishonour to the drawer, **except in special cases**.
12. A cheque may be crossed but there is no provision to cross a Bill.
13. The payment of cheque may be countermanded by the Drawer. (**Countermand means - to reverse, revoke, repeal, retract, rescind, withdraw, quash, scrap, over-rule, cancel, negate an order.**)
14. The payment of a bill of Exchange cannot be countermanded.
15. A Cheque does not require any stamp
16. A Bill of Exchange must be stamped.

As said above, In case of Bills of Exchange, it is necessary to give Notice of Dishonour to the drawer, **except in special cases given below :**

Now, let us revise partly, what we read about the Law of Contracts - Indian Contract Act, 1872

To start with, let us cover **Offer and Acceptance**.

In every contract, there has to be two or more persons. One party will offer/propose to do something and the other party will agree/accept the **offer /proposal**. However, a party may even offer not to do something and the other party may **agree/accept** that.

The question arises - Will all agreements be contracts ? The answer is - No, only those agreements that can be enforced in the court of law are contracts. For example, an agreement to play chess or sing a song just for fun.

So, now ask yourself - **What is an Offer ?**

The Answer is simple. An offer is just an act of making a Proposal. Read Sec.2(a) and understand that. The person making the Offer is the Offeror /Proposer/Promisee and the person to whom you propose is the Offeree. The offer has to be for a Consideration and when that is accepted by the other party, the other party becomes the Acceptor and there is a contract.

Well, ask yourself - **How do I make an offer ?**

The answer is that there are certain **Rules regarding Offer** which are : 1. (i). **An offer can be in words spoken or written** and (ii). **An offer can be implied by conduct**. For example : X tells Y by word of mouth or in writing that he wants to sell his Mobile Phone for Rs.5000 that is an offer when Y accepts it, there is a contract.

The State Transport Corporation runs a Bus from Location A to location B along a fixed route. Here it is implied by conduct that the bus is offering to carry passengers against a specific fare structure. When a passenger boards the bus it is implied that he accepts to offer and wants to become a passenger. Here too, there is a implied contract. 2. **The terms of offer must be certain**. Example :When the passenger boards the bus, he accepts to pay the specific fare and follow certain terms offered. 3. **A simple intention to sell is not an offer or an advertisement is an invitation to make an offer but is not an offer**. For example : A told C that his old mobile phone was fetching him Rs.5000 but he did not say that he was willing to sell at that price. Here there is no contract between A and C. 4. **An offer must be communicated and the offeree must be aware of such offer**. 5. **If an offer is conditional, such conditions must be clearly**

communicated to the offeree.

So, we arrive at the obvious question -
How should I communicate the offer to other person /s ?

As said above, an offer can be in words spoken or written and (ii). An offer can be implied by conduct. The offer by the bus to move along a specified route and carry passengers is a clear example of an offer by conduct.

Section 2(b) states that a proposal when **accepted** becomes a promise. So, the question arises - **What are the Rules regarding Acceptance ?**

The answer is that -1. Sec.7(1) lays that **an acceptance must be absolute and unqualified**. Even, if a insignificant point of variation between the terms of offer and the terms of acceptance is found, there is no contract. For example : You offer to sell your Office Premises to Y for Rs.5,00,000 and no payment term was laid.Y sends you a bank draft for Rs.1,00,000 and promises to pay the balance Rs,4,00,000 after 2 months. So, here the acceptance is conditional and so there is no contract. 2. **An acceptance must be expressed in a usual or reasonable manner**. (Refer Sec,7(2).Such acceptance can be by word of mouth, in writing or by post or even by conduct, but the offeree must do what the offeror wants him to do. (Refer Sec.8) . 3. **A mental acceptance is not a contract. Moreover, an acceptance which is not communicated is not a contract**. For example : You write to your friend X that you want to sell your Motorcycle for Rs.10,000 . Your friend mentally decides to buy the motorcycle and even writes a letter addressed to you, but forgets to post the letter to you or verbally inform you. This does not result in a contract. 4. **If the Offer or prescribes a specific mode of acceptance, the Offeree must follow that particular mode unless the offeror waives it**. (Read Sec.7(2), 5. Both the Communication of the Offer and he communication of the Acceptance must be complete. Another point is that the acceptance must be made till the offer is in force. For example : A desires to sell his Motor Car for Rs.50,000 before 31st January,2018 ,such an offer is not valid after 31st January,2018.



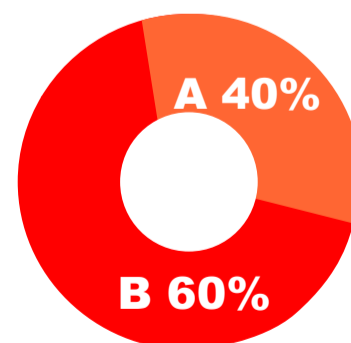


PAPER: 4

FUNDAMENTALS OF BUSINESS MATHEMATICS AND STATISTICS (FBMS)

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Your Preparation Quick Takes



Syllabus Structure

A Fundamentals of Business Mathematics 40%

B Fundamentals of Business Statistic 60%

Learning Objectives:

- To understand the basic concepts and needs of Business Mathematics.
- To Know the reasonableness and explanation in calculation.
- To know the application of various mathematical techniques.

BUSINESS MATHEMATICS AND STATISTICS

In this issue we will discuss some conventional problems on Quadratic Equations

$ax^2 + bx + c$ where a, b, c are real numbers and $a \neq 0$ is called quadratic expression in the variable x ;

An equation of the type $ax^2 + bx + c = 0$ where $a \neq 0$ is called a quadratic equation in x ;

$ax^2 + bx + c = 0$ where $a \neq 0$ is the general form of a quadratic equation;

General method of solving quadratic equation $ax^2 + bx + c = 0$, $a \neq 0$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \text{ i.e.}$$

Roots of a quadratic equation is

$$x_1 = \frac{-b + \sqrt{b^2 - 4ac}}{2a} \quad \& \quad x_2 = \frac{-b - \sqrt{b^2 - 4ac}}{2a}$$

$b^2 - 4ac$ is called the discriminant of the equation and is usually denoted by

Discriminant $\Delta = b^2 - 4ac$

	When a, b, c are real & $a \neq 0$	When a, b, c are rational & $a \neq 0$
$\Delta = 0$	Roots are real and equal	Roots are rational and equal
$\Delta > 0$	Roots are real and unequal	Roots are rational and unequal if Δ perfect square; otherwise irrational & unequal
$\Delta < 0$	Roots are complex conjugate	Roots are complex conjugate

When $b^2 - 4ac > 0$ the roots are real;

$b^2 - 4ac < 0$, the roots are imaginary (complex);

$b^2 - 4ac = 0$, the roots are equal;

Illustration:

a) $3x^2 - 4x - 4 = 0$; when $b^2 - 4ac > 0$

b) $4x^2 - 2x + \frac{1}{4} = 0$; When $b^2 - 4ac = 0$

c) $x^2 - 4x + 13 = 0$; When $b^2 - 4ac < 0$, roots are complex conjugate;

d) $2x^2 - 2\sqrt{3}x + 1 = 0$; if one root is of form $p + \sqrt{q}$ other root will be $p - \sqrt{q}$ form;

Sum and product of roots:

Let the roots of the quadratic equation $ax^2 + bx + c = 0$ are indicated as α & β such

that $\alpha = \frac{-b + \sqrt{b^2 - 4ac}}{2a}$ & $\beta = \frac{-b - \sqrt{b^2 - 4ac}}{2a}$ then we can write----

$$a + \beta = -\frac{b}{a} \text{ \& } a\beta = \frac{c}{a}$$

Formation of a quadratic equation:

If a & β are two roots of a quadratic equation then we can form the equation as

$$x^2 - (\text{Sum of roots})x + \text{product of roots} = 0$$

A pure quadratic equation is $ax^2 + c = 0$, $a \neq 0$ and the roots are

$$x_1 = \sqrt{-\frac{c}{a}} \text{ \& } x_2 = -\sqrt{-\frac{c}{a}}$$

Q1. Solve $\sqrt{5x^2 - 6x + 8} - \sqrt{5x^2 - 6x - 7} = 1$;

Ans:

$$\text{Let } \left(\sqrt{5x^2 - 6x + 8} - \sqrt{5x^2 - 6x - 7} \right) = 1 \dots\dots\dots (1)$$

$$(5x^2 - 6x + 8) - (5x^2 - 6x - 7) = 15$$

Or

$$\frac{(5x^2 - 6x + 8) - (5x^2 - 6x - 7)}{\sqrt{5x^2 - 6x + 8} - \sqrt{5x^2 - 6x - 7}} = \frac{15}{1}$$

Or,

$$\frac{\left\{ (5x^2 - 6x + 8) - (5x^2 - 6x - 7) \right\} \left\{ \sqrt{5x^2 - 6x + 8} + \sqrt{5x^2 - 6x - 7} \right\}}{\left\{ \sqrt{5x^2 - 6x + 8} - \sqrt{5x^2 - 6x - 7} \right\} \left\{ \sqrt{5x^2 - 6x + 8} + \sqrt{5x^2 - 6x - 7} \right\}} = \frac{15}{1}$$

Or,

$$\left(\sqrt{5x^2 - 6x + 8} + \sqrt{5x^2 - 6x - 7} \right) = 15 \dots\dots\dots (2)$$

By (1) + (2) we get $2\sqrt{5x^2 - 6x + 8} = 16$

$$\text{Or, } \sqrt{5x^2 - 6x + 8} = 8$$

$$\text{Or, } 5x^2 - 6x + 8 = 64$$

$$\text{Or, } 5x^2 - 6x - 56 = 0$$

$$\text{Or, } x = \frac{6 \pm \sqrt{36 + 4 \times 5 \times 56}}{2 \times 5}$$

$$\text{Or, } x = \frac{6 + \sqrt{36 + 4 \times 5 \times 56}}{2 \times 5} \text{ Or, } x = \frac{6 - \sqrt{36 + 4 \times 5 \times 56}}{2 \times 5}$$

$$\text{Or, } x = 4 \text{ Or, } x = -2.8$$

Q2. Solve $x^{\frac{2}{3}} + x^{\frac{1}{3}} = 2$;

Ans:

$$\text{Put } x^{\frac{1}{3}} = t \text{ we get}$$

$$t^2 + t - 2 = 0$$

$$\text{Or, } (t+2)(t-1) = 0$$

$$\text{Or, } t = -2 \text{ or } 1$$

$$\text{Or, } x^{\frac{1}{3}} = -2 \text{ or } 1$$

$$\text{Or, } x = -8 \text{ or } 1$$

Q3. Evaluate $\sqrt{6 + \sqrt{6 + \sqrt{6 + \sqrt{6 + \dots \infty}}}}$

Ans:

$$\text{Let } x = \sqrt{6 + \sqrt{6 + \sqrt{6 + \sqrt{6 + \dots \infty}}}}$$

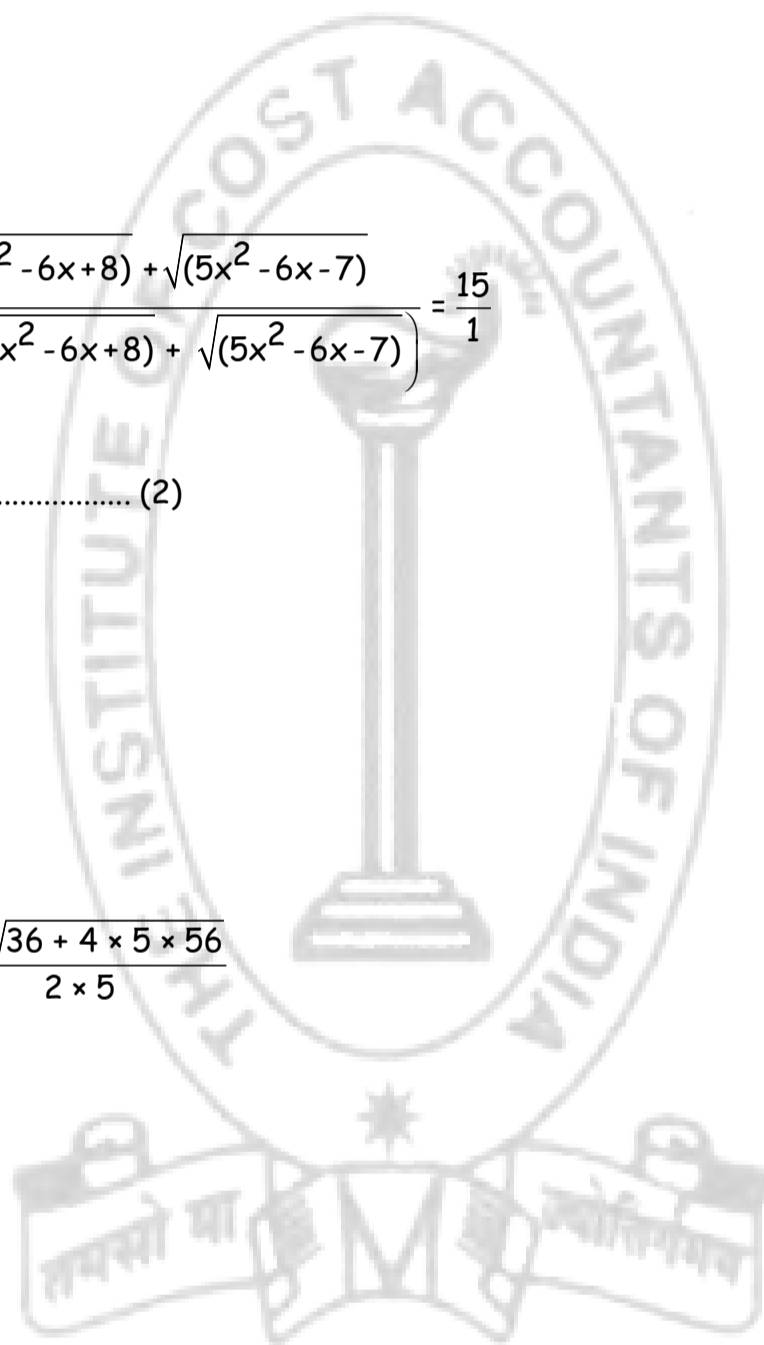
$$\text{Or, } x^2 = 6 + \sqrt{6 + \sqrt{6 + \sqrt{6 + \sqrt{6 + \dots \infty}}}}$$

$$\text{Or, } x^2 = 6 + x$$

$$\text{Or, } x^2 - x - 6 = 0$$

$$\text{Or, } (x - 3)(x + 2) = 0$$

$$\text{Or, } x = 3 \text{ or } -2$$



Q4. Evaluate $2 + \frac{1}{2 + \frac{1}{2 + \frac{1}{2 + \dots \infty}}}$

Ans:

Let $x = 2 + \frac{1}{2 + \frac{1}{2 + \frac{1}{2 + \dots \infty}}}$

Or, $x = 2 + \frac{1}{x}$

Or, $x^2 - 2x - 1 = 0$

Or, $x = \frac{2 + \sqrt{4 + 4}}{2}$ or $\frac{2 - \sqrt{4 + 4}}{2}$

Or, $x = 1 + \sqrt{2}$ or $1 - \sqrt{2}$

Q5. Solve $\frac{\sqrt{a+x} + \sqrt{a-x}}{\sqrt{a+x} - \sqrt{a-x}} = \frac{a}{x}, x \neq 0$

Ans:

Rationalising the denominator of L.H.S we get

$\frac{\sqrt{a+x} + \sqrt{a-x}}{\sqrt{a+x} - \sqrt{a-x}} \times \frac{\sqrt{a+x} + \sqrt{a-x}}{\sqrt{a+x} + \sqrt{a-x}} = \frac{a}{x}, x \neq 0$

Or, $\frac{(\sqrt{a+x} + \sqrt{a-x})^2}{(a+x) - (a-x)} = \frac{a}{x}$

Or, $\frac{a+x+a-x+2\sqrt{a+x} \times \sqrt{a-x}}{2x} = \frac{a}{x}$

Or, $\frac{2a+2\sqrt{a+x} \times \sqrt{a-x}}{2x} = \frac{a}{x}$

Or, $a + \sqrt{a^2 - x^2} = a$

Or, $x^2 = a^2$

Or, $x = a$ or $(-)a$

Q6. Solve $(x^2 + 2)^2 + 8x^2 = 6x(x^2 + 2)$;

Ans:

Let $x^2 + 2 = A$

Or, $A^2 + 8x^2 - 6Ax = 0$

Or, $8x^2 - 6Ax + A^2 = 0$

Or, $8x^2 - 4Ax - 2Ax + A^2 = 0$

Or, $4x(2x - A) - A(2x - A) = 0$

Or, $(2x - A)(4x - A) = 0$

Or, $x = \frac{A}{2}$ or, $\frac{A}{4}$

Or, $x^2 - 2x + 2 = 0$ or $x^2 - 4x + 2 = 0$

Or, $x = \frac{2 \pm \sqrt{4 - 8}}{2}$ or, $\frac{4 \pm \sqrt{16 - 8}}{2}$

Or, $x = 1 \pm i$ or $2 \pm \sqrt{2}$

Q7. A trader bought a number of articles for R1200. Ten articles were damaged and he sold each of the rest at Rs.2 more than what he paid for, thus clearing a profit of Rs.60 on the whole transaction. Taking the number of articles he bought as x form an equation in x and solve it.

Ans:

Let x be the number of articles purchased at R1200



$$\text{So purchase price per unit} = \frac{1200}{x}$$

$$\text{Therefore sale price per unit} = \frac{1200}{x} + 2$$

Since 10 articles were damaged so no of articles sold = $x - 10$

Since there is a profit of R60, then total sale proceeds will be = $1200 + 60 = 1260$

$$\text{Therefore we can write } (x - 10) \times \left(\frac{1200}{x} + 2 \right) = 1260$$

$$\text{Or, } (x - 10)(1200 + 2x) = 1260x$$

$$\text{Or, } 1200x - 12000 + 2x^2 - 20x = 1260x$$

$$\text{Or, } 2x^2 - 80x - 12000 = 0$$

$$\text{Or, } x^2 - 40x - 6000 = 0$$

$$\text{Or, } x = \frac{40 \pm \sqrt{1600 + 4 \times 6000}}{2}$$

$$\text{Or, } x = 100$$

Q8. Solve $x(x+2)(x^2-1) = -1$;

Ans: $x(x+2)(x^2-1) = x(x+2)(x+1)(x-1) = -1$

$$\text{Or, } x(x+1)(x+2)(x-1) = -1$$

$$\text{Or, } (x^2+x)(x^2+x-2) = -1$$

$$\text{Let } x^2+x = A$$

$$\text{So, } A(A-2) = -1$$

$$\text{Or, } A^2 - 2A + 1 = 0$$

$$\text{Or, } (A-1)^2 = 0$$

$$\text{Or, } A = 1$$

$$\text{Or, } x^2+x-1=0$$

$$\text{Or, } x = \frac{-1 \pm \sqrt{5}}{2}$$

Q9. If α and β are roots of the equation $x^2 - 4x + 2 = 0$, find the value of $\alpha^2 + \beta^2$;

Ans:

As α and β are roots of the equation $x^2 - 4x + 2 = 0$, we can write

$$\alpha + \beta = \frac{-(-4)}{1} = 4 \quad \& \quad \alpha\beta = \frac{2}{1} = 2$$

$$\text{Therefore } \alpha^2 + \beta^2 = (\alpha + \beta)^2 - 2\alpha\beta = (4)^2 - 2 \times 2 = 16 - 4 = 12$$

Q10. If the roots of the equation $x^2 - lx + m = 0$ differ by 1, then prove that $l^2 = 4m + 1$;

Ans:

Let the roots be a & $a + 1$

$$\text{So, } a + a + 1 = l \quad \& \quad a(a + 1) = m$$

$$\text{So, } 2a = l - 1$$

$$\text{Or, } a = \frac{l-1}{2} \quad \& \quad \text{putting this value in } a(a+1) = m$$

$$\text{Or, } \frac{l-1}{2} \left(\frac{l-1}{2} + 1 \right) = m$$

$$\text{Or, } \frac{l-1}{2} \times \frac{l+1}{2} = m$$

$$\text{Or, } l^2 = 4m + 1$$

Q11. If the equation $x^2 - ax + b = 0$ $x^2 - cx + d = 0$ have one root in common and the second equation has equal roots, then prove that $ac = 2(b + d)$;

Ans:

Since $x^2 - cx + d = 0$ has equal roots we can write

$$c^2 - 4d = 0, \text{ A equal roots means discriminant} = 0$$

$$\text{So } d = \frac{c^2}{4}$$

Putting this value in $x^2 - cx + d = 0$ we get

$$x^2 - cx + \frac{c^2}{4} = 0$$

$$\text{Or, } 4x^2 - 4cx + c^2 = 0$$

$$\text{Or, } (2x - c)^2 = 0$$

$$\text{Or, } x = \frac{c}{2}$$

Since equation $x^2 - ax + b = 0$ $x^2 - cx + d = 0$ have one root in common, we can write

$$\left(\frac{c}{2}\right)^2 - a\frac{c}{2} + b = 0$$

$$\text{Or, } \frac{c^2}{4} - a\frac{c}{2} + b = 0$$

$$\text{Or, } d - a\frac{c}{2} + b = 0$$

$$\text{Or, } ac = 2(b + d)$$

Q12. If the roots of the equation $2x^2 + (k+1)x + (k^2 - 5k + 6) = 0$ are of opposite sign then show that $2 < k < 3$;

Ans:

Since the roots are of opposite signs, roots are real and distinct

So discriminant > 0 and product of roots < 0

$$\text{Or, } (k+1)^2 - 4 \times 2 \times (k^2 - 5k + 6) > 0 \ \& \ \frac{k^2 - 5k + 6}{2} < 0$$

First condition is always true when second holds

$$\text{Hence } \frac{k^2 - 5k + 6}{2} < 0$$

$$\text{Or, } (k - 3)(k - 2) < 0$$

This is possible only if $2 < k < 3$

Q13. If the equations $3x^2 + px + 1 = 0$ and $2x^2 + qx + 1 = 0$ have a common root, show that $2p^2 + 3q^2 - 5pq + 1 = 0$;

Ans:

Let be the common root of the equations given. So we can write

$$3a^2 + pa + 1 = 0 \dots\dots\dots(1) \ \&$$

$$3a^2 + qa + 1 = 0 \dots\dots\dots(2) \ \&$$

By (1) \times 2 and (2) \times 3 we get

$$6a^2 + 2pa + 2 = 0 \dots\dots\dots(3) \ \&$$

$$6a^2 + 3qa + 3 = 0 \dots\dots\dots(4) \ \&$$

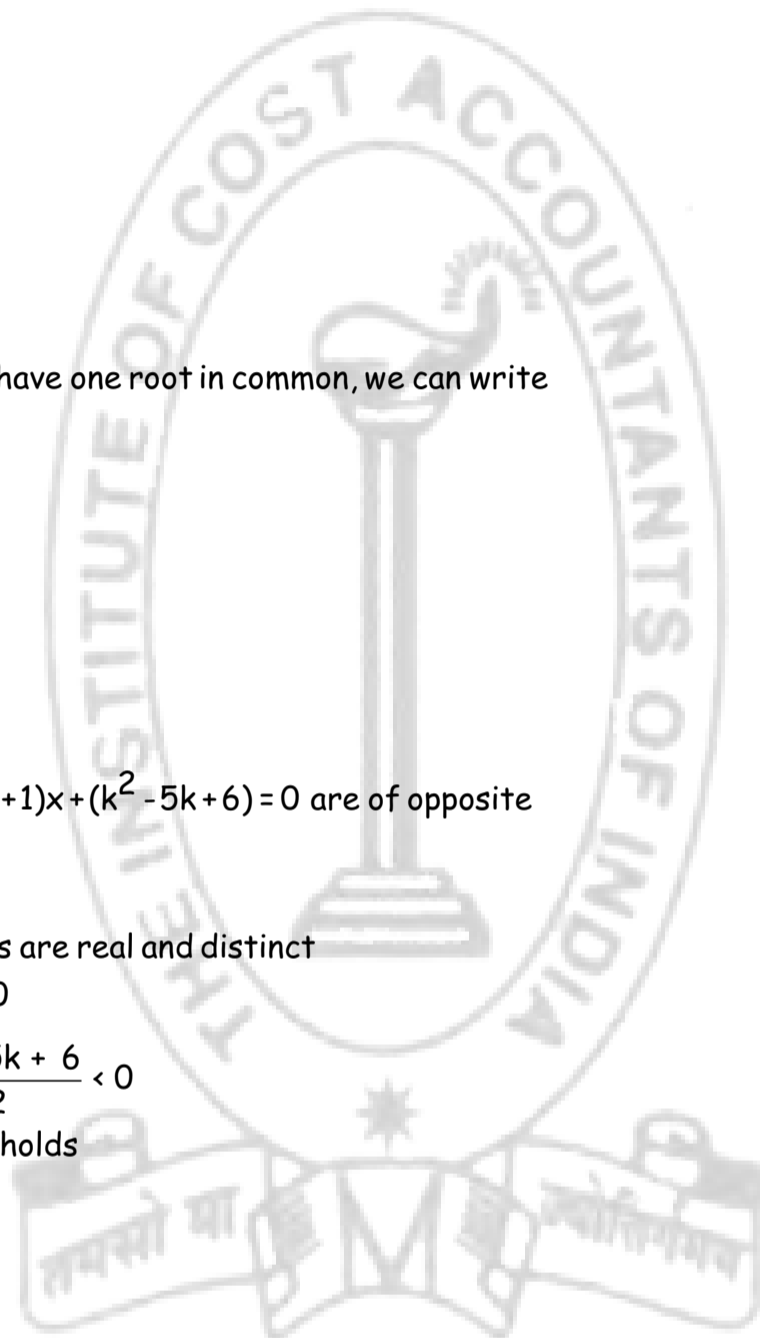
By (4) - (3) we get

$$a(3q - 2p) = -1$$

$$\text{So } a = -\frac{1}{3q - 2p}$$

Putting this value in (1)

$$3 \times \frac{1}{(3q - 2p)^2} - \frac{p}{3q - 2p} + 1 = 0$$



$$\text{Or, } 3 - p(3q - 2p) + (3q - 2p)^2 = 0$$

$$\text{Or, } 3 - 3pq + 2p^2 + 9q^2 - 12pq + 4p^2 = 0$$

$$\text{Or, } 6p^2 + 9q^2 - 15pq + 3 = 0$$

$$\text{Or, } 2p^2 + 3q^2 - 5pq + 1 = 0$$

Q14. If α & β be the roots of the equation $2x^2 - 3x + 1 = 0$ find an equation whose

roots are $\frac{\alpha}{2\beta + 3}$ & $\frac{\beta}{2\alpha + 3}$

Ans:

$$\alpha + \beta = \frac{3}{2}, \alpha\beta = \frac{1}{2}$$

The required equation $x^2 - (\text{sum of roots})x + \text{product of roots} = 0$

$$\text{Sum of roots} = \frac{\alpha}{2\beta + 3} + \frac{\beta}{2\alpha + 3} = \frac{2\alpha^2 + 3\alpha + 2\beta^2 + 3\beta}{(2\beta + 3)(2\alpha + 3)} = \frac{2(\alpha^2 + \beta^2) + 3(\alpha + \beta)}{(4\alpha\beta + 6\alpha + 6\beta + 9)} = \frac{2(\alpha + \beta)^2 - 4\alpha\beta + 3(\alpha + \beta)}{(4\alpha\beta + 6\alpha + 6\beta + 9)}$$

$$\text{Or, } \frac{2(\alpha + \beta)^2 - 4\alpha\beta + 3(\alpha + \beta)}{(4\alpha\beta + 6\alpha + 6\beta + 9)} = \frac{2 \times \left(\frac{9}{4}\right) - 4\left(\frac{1}{2}\right) + 3\left(\frac{3}{2}\right)}{\left(4 \times \frac{1}{2} + 6 \times \frac{3}{2} + 9\right)} = \frac{4.5 - 2 + 4.5}{2 + 9 + 9} = \frac{7}{20}$$

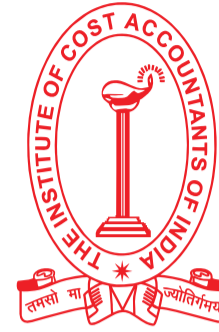
$$\text{Product of roots} = \frac{\alpha}{2\beta + 3} \times \frac{\beta}{2\alpha + 3} = \frac{\alpha\beta}{(4\alpha\beta + 6\alpha + 6\beta + 9)} = \frac{1}{40}$$

So the required equation is $x^2 - \frac{7}{20}x + \frac{1}{40} = 0$

$$\text{Or, } 40x^2 - 14x + 1 = 0$$

Suggestions:

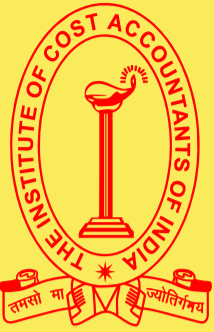
The study guide needs to be read thoroughly. Supplementary readings could be made from other resources. This issue is based totally on study guide issued by the institute. Standard books could be referred for additional expertise to attend the conventional questions. This lesson is an extension of discussion on the topic in guide book. Detailed discussions on different formulas are not done here to avoid repetition. This lesson is purely an aid to study guide on paper 4- Fundamental of Business mathematics and Statistics written and issued by Institute on Syllabus -16.



Examination RESCHEDULED TIME TABLE

Day & Date	Foundation Examination Syllabus-2016	
	Time 10.00 A.M. to 12.00 NOON. Paper - 1 & 2 (200 Marks)	Time 2.00 P.M. to 4.00 P.M. Paper - 3 & 4 (200 Marks)
Sunday, 6th September, 2020	Paper - 1 : Fundamentals of Economics & Management (100 Marks 50 Multiple Choice Questions)	Paper - 3 : Fundamentals of Laws & Ethics (100 Marks 50 Multiple Choice Questions)
	Paper - 2 : Fundamentals of Accounting (100 Marks 50 Multiple Choice Questions)	Paper - 4 : Fundamentals of Business Mathematics & Statistics (100 Marks 50 Multiple Choice Questions)

STAY HOME STAY SAFE



PRACTICAL Advice

ABOUT YOUR STUDIES - FOUNDATION COURSE

Practical support, information and advice to help you get the most out of your studies.

START

01

**Read Study Notes,
MTPs, E-Bulletin,
Work Books, Attend
Webinar sessions**

**Solve Exercises
given in Study Note**

02

03

Assess Yourself

Appear For Examination

04

FINISHED



SUBMISSIONS

Dear Students,

We are very much delighted to receive responses from all of you; for whom our effort is!

We have noted your queries and your requests will definitely be carried out. Further, requesting you to go through the current edition of the bulletin. All the areas will be covered gradually. Expecting your responses further to serve you better as we believe that there is no end of excellence! One of the mails received is acknowledged below.

Please put your opinions so that we can make your e-bulletin everything that you want it to be.

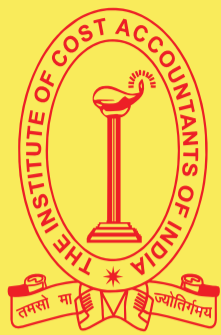
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Send your Feedback to:
e-mail: studies.ebulletin@icmai.in
website: <http://www.icmai.in>

Updation of E-Mail Address/Mobile:

Students are advised to update their E-Mail id and Mobile Numbers timely so that important communications are not missed as the same are sent through bulk mail/SMS nowadays. Student may update their E-Mail id/ Mobile Number instantly after logging into their account at www.icmai.in at request option.





Message from Directorate of Studies

Dear Students,

All of you knows that Independence Day, in India, is celebrated annually on August 15. It also marks the anniversary of the partition of the subcontinent into two countries, India and Pakistan, which occurred at midnight on August 14-15, 1947. The Indian Independence Bill was introduced in the British House of Commons on July 4, 1947, and passed within 15 days. On August 15, 1947, the British rule over India ended and marked history. The year 2020 marks the 74th Independence Day which have been celebrated amid the ongoing coronavirus pandemic in the country.

We expect that our "Online Mock Test Platform for CMA Students" under the link: https://eicmai.in/MCQ_Portal/login.aspx helps you to have a fair idea about the forthcoming on-line examination, for Foundation Students.

We wish our heartfelt wishes to all the examinees appearing for the forthcoming September, 2020 Examinations for the Foundation course.

You know that the nation is celebrating 150th birth anniversary of the father of the nation **M.K. Gandhi**. One of his inspirational message towards the students were:

"You must be the Change you wish to see in the World",

Let us observe his memory, following the above message.

Certain general guidelines are listed below and which will help you in preparing yourselves:

- Conceptual understanding & Overall understanding of the subject should be clear.
- Candidates are advised to go through the study material provided by the Institute in an analytical manner.
- Students should improve basic understanding of the subject with focus on core concepts.
- The Candidates are expected to give to the point answer, which is a basic pre-requisite for any professional examination.
- To strengthen the answers candidates are advised to give answer precisely and in a structured manner.
- In-depth knowledge about specific terms is required.
- Write question numbers correctly and prominently.
- Proper time management is also important while answering.

Please refer the link mentioned below :

<https://icmai.in/studentswebsite/>

- Don't give up
- Don't give in
- Don't give out

You can win!

GOOD LUCK

Be Prepared and Get Success;

Disclaimer:

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THE INSTITUTE OF COST ACCOUNTANTS OF INDIA

Statutory Body under an Act of Parliament

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CMA Bhawan, 3 Institutional Area, Lodhi Road, New Delhi - 110003

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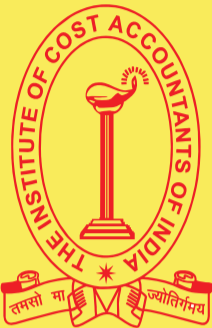
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Few Snapshots



Flag Hoisting Ceremony at HQ to celebrate Independence Day of the nation



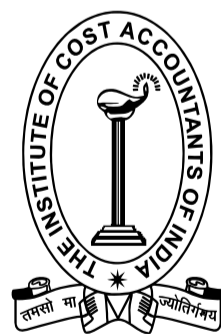
Flag Hoisting Ceremony at HQ to celebrate Independence Day of the nation



ICAI SIRC Flag Hoisting on 74th Independence Day of INDIA: CMA H Padmanabhan Council Member, CMA Jyothi Satish, Chairperson SIRC, CMA Rajesh Sai Iyer, RCM SIRC and team at Chennai



Message on COVID-19 from Students, Staff, Members of Nellore Chapter.



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