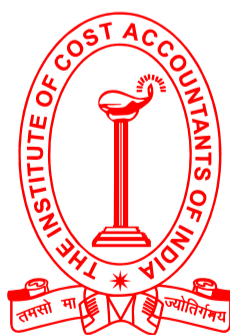75

HAPPY
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Contents

Azadi Ka Amrit Mahotsav

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.

Azadi Ka
Amrit Mahotsav
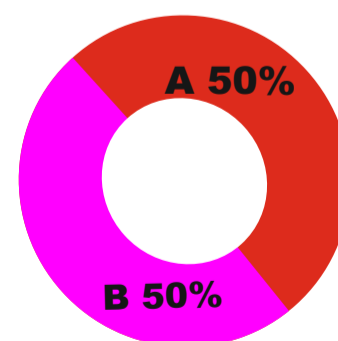
PAPER: 1, PART: I

FUNDAMENTALS

OF ECONOMICS & MANAGEMENT
(FEM) – ECONOMICS

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Your Preparation Quick Takes

A 50%

B 50%

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 are enjoying the monsoon season. The fourth wave of Covid 19 has arrived along with Monkey pox and attacking people mercilessly who are exposing themselves without taking any protection like using masks and sanitizers. I hope you are extra cautious in staving the notorious virus away. For heaven's sake do please avoid crowd. Because in a crowded place it will be difficult to protect yourself. Wash your hands and mouth frequently, particularly when you return home after attending the Institute.
Let us start our usual exercise of mock test.

I. **Choose the correct answer:**

1. **The degree of elasticity for luxury good is**
   A. High
   B. Low
   C. Moderate
   D. None of the above

2. **The concept of elasticity was invented by**
   A. Keynes
   B. Adam smith
   C. Marshall
   D. Robbins

3. **If the straight-line supply curve passes through the origin, the price elasticity of supply will be**
   A. Unity
   B. Greater than unity
   C. Less than unity
   D. None of the above

4. **If the price of potato rises from Rs. 12 to Rs. 20 and as a result of this the sale of potato falls from 300kg to200kg per day, find out the price elasticity of demand of potato**
   A. 0.5
   B. 0.8
   C. 0.25
   D. 0.1

5. **If the price of Air-conditioner falls, the total revenue from Air-conditioner sales is found to be rising, what will be the shape of the straight-line demand carve of the Air-conditioner?**
   A. It will be almost steep
   B. It will be almost flat
   C. It will be perpendicular on the x-axis
   D. None of the above

6. **Given that the initial price and demand are Rs.4 and 200gm, while final price and demand are Rs.6 and 100gm respectively. Find out the arc elasticity**
   A. 1/3
   B. 4/3
   C. 5/3
   D. None of the above

7. In a perfectly competitive market, the demand equation is D=8p/(p-2) and the supply equation is S=p2 (read p square). Find out the equilibrium price
   A. 3
   B. 4
   C. 5
   D. 6

8. If p=120, T=5,00,000, V=5, find out M
   A. 2 crore
   B. 3 crore
   C. 1 crore
   D. 1.2 crore

9. Function of money is
   A. Medium of exchange
   B. Store of value
   C. Basis of credit
   D. All the three A,B and C

10. Which of these would lead to a fall in the demand for money
    A. Increase in wealth
    B. Increase in real income
    C. Inflation
    D. Increase in real rate of interest

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

II. **Fill in the blanks:**
   1. Money market is also called ……………… Market
   2. For external economies of scale, the LAC curve will …………… Through out its length.
   3. AR curve and the ……………… Curve, both are the same.
   4. Monopolistic competition is also called ……………… ………………
   5. Normal profit is essentially a part of …………… ……………

KEY:1. Credit, 2. Fall 3. Demand 4. Product differentiation 5. Total cost

III. True or false:
   1. Free entry and free exit is one of the conditions of monopolistic competition
   2. Firm under perfect competition always earns normal profit
   3. Alfred Marshall is the Father of economics
   4. In the long run, AC = AFC+AVC
   5. Law of variable proportion is the other name of the law of diminishing marginal productivity

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

IV. Matching :

1. Rectangular hyperbola	A. supply of electricity
2. Consumer surplus	B. Interdependence
3. Discriminating monopoly	C. unit price elasticity
4. Oligopoly	D. SDR
5. IMF	E. willing price – actual price

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

So friends, how do you like this mock test? A bit mathematical though, but it is refreshing isn't it? You have to work out some simple mathematical problems in order to have a good grasp on the subject. Try to practice this type of mathematical problems at home. In the olden days, economics was treated as political economy by the Classical economists. Neo-Classical economists introduced high doses of mathematics to explain the various concepts of economics. Later on, Modern economists like Paul A. Samuelson wrote books on economics based on higher mathematics. So you can't possibly escape from the mathematical treatment of economics.
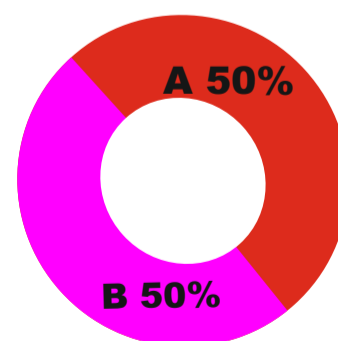
Azadi Ka Amrit Mahotsav

PAPER: 1, PART: II

FUNDAMENTALS

OF ECONOMICS & MANAGEMENT
(FEM) – MANAGEMENT

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Your Preparation Quick Takes

A 50%

B 50%

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

1. **Management functions include _____**
   A. Planning & organizing
   B. Directing
   C. Controlling
   D. All of the above
   Answer: D

2. **Management skills applies to managers at _____**
   A. Middle levels in an organization
   B. Top levels in an organization
   C. Executive levels in an organization
   D. All levels in an organization
   Answer: D

3. **Managerial skills involve _____**
   A. Technical skills
   B. Human skills
   C. Conceptual skills
   D. All of the above
   Answer: D

4. **_____ is the basic reason for its existence:**
   A. The organizational vision
   B. The organizational mission
   C. The organizational objectives
   D. The organizations CEO
   Answer: B

5. **Planning is about deciding in advance what should be done:**
   A. Organizing
   B. Directing
   C. Planning
   D. Controlling
   Answer: C

6. **The important element in business is:**
   A. Risk
   B. Black marketing
   C. Profit
   D. All of above
   Answer: A

7. **The institution organized and operated to provide goods and services to society under the incentive of private gain is known as:**
   A. Business
   B. Govt. offices
   C. Non Govt. organization
   D. None of these
   Answer: A

8. **In which form of business organization there is a direct relationship between efforts and reward:**
   A. Partnership
   B. Cooperatives organization
   C. Sole proprietorship
   D. Joint stock company
   Answer: C
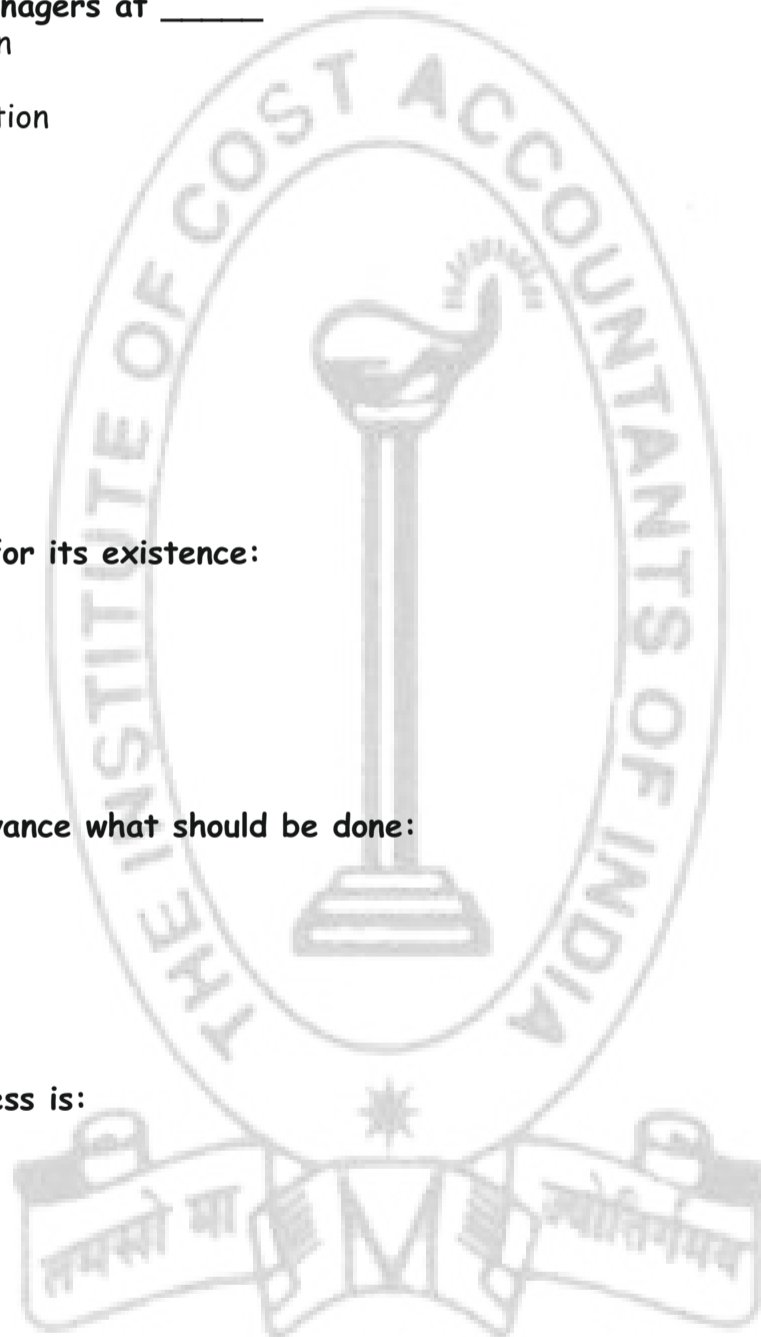
9. **Which of the following is the oldest model of organization?**
   A. Committee organization
   B. Functional organization
   C. Line organization
   D. Line and staff organization
   Answer: C

10. **Giving complete freedom to subordinates is:**
   A. Autocratic leadership
   B. Laissez fair leadership
   C. Democratic leadership
   D. None of these
   Answer: B

11. **In partnership firm written deed is preferred because of the following reasons:**
   A. So that it may be referred to easily in case of any dispute
   B. It may be enforced by the court of law
   C. Profit and loss may be settled easily by partners
   D. All of the above
   Answer: D

12. **Staffing deals with:**
   A. Present requirement
   B. Past requirement
   C. Future requirement
   D. Present & Future requirement
   Answer: D

13. **Centralization means:**
   A. Decreasing the work pressure among officers
   B. Limit the authority to officers only
   C. Establishing different branches at one place
   D. None of these
   Answer: A

14. **Which one of the following statement is true?**
   A. Management is above administration
   B. Management and administration is same
   C. Management is below administration
   D. Management and administration are two different discipline
   Answer: C

15. **Negative motivation is**
   A. Compulsory leave
   B. Compulsory retirement
   C. Fine
   D. All of the above
   Answer: D
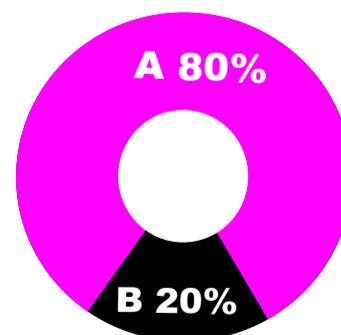
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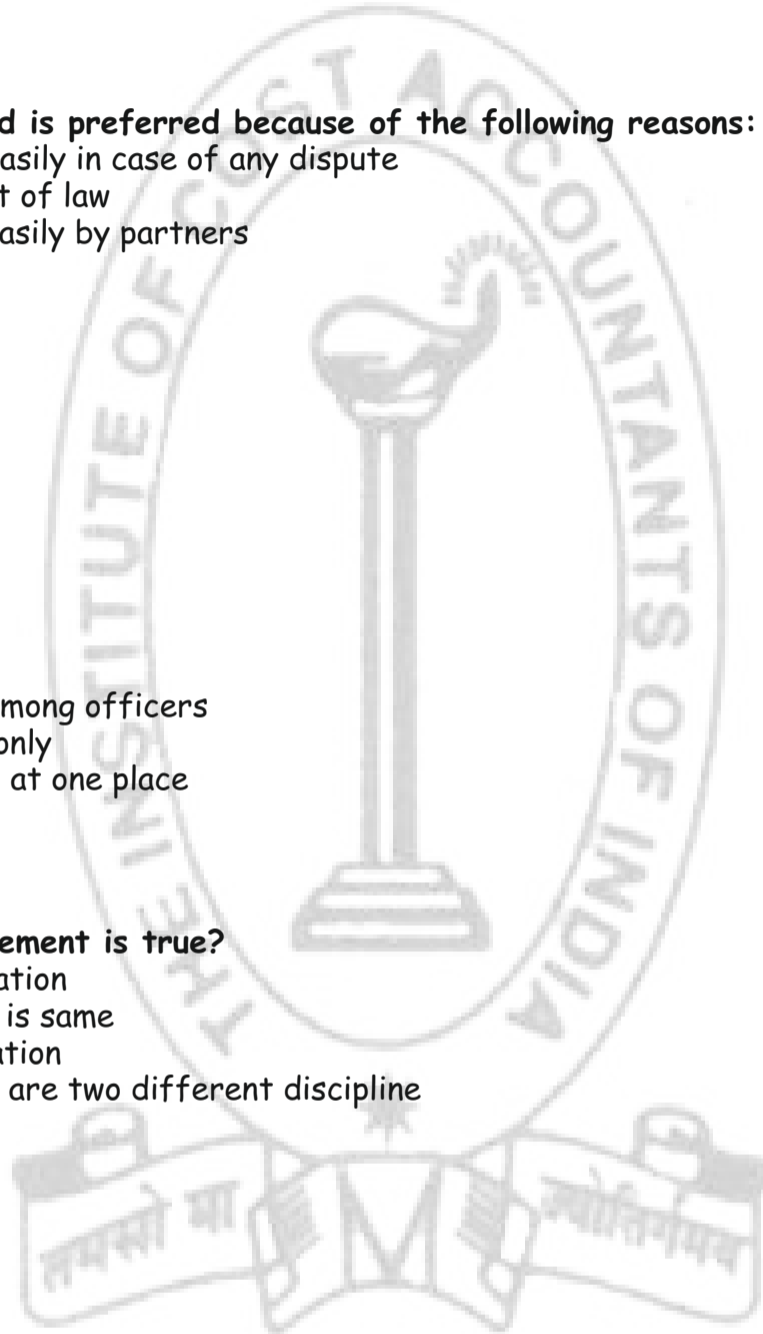
PAPER: 2

FUNDAMENTALS

OF ACCOUNTING (FOA)

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Your Preparation Quick Takes

A 80%

B 20%

Syllabus Structure

A Fundamentals of Financial Accounting **80%**

B Fundamental of Cost Accounting **20%**

FINANCIAL OF ACCOUNTING

In every issue we start with a new story. Here is again a very known story to look back for you. Once, four students had a party overnight before the date of the examination and for obvious reason they could not perform well. They decided to go the principal to request for a retest with a solid reason pre planned. They told the principal that while coming to college for the test together, they met with flat tyre and had to push the car although out to reach the college and could not perform well.

Principal was happy that students want to retest. He told them to reappear the test after a week. A week later they asked to sit in four different rooms and had been given an MCQ question to write the correct answer with four options.

The question was:
While coming to college which tyre was flattened?
   a. Front left
   b. Front right
   c. Back left
   d. Back right.

There should be only one answer if they were true.
However, you can understand what happened thereafter.
Answering an MCQ pattern question – though seems very easy – is really very difficult unless you have the fullest confidence on the topic.
Please go through the minute details of the topics from study materials so that this confidence grows to put a perfect tick among the options.
Here is some practice material for you:

1. **Which of the following is an external user of accounting information?**
   a.   Stock exchange
   b.   Employees
   c.   Directors
   d.   All of them

2. **How will you substitute the following phrase: "from which future economic benefit is expected to grow?**
   a.   Liability
   b.   Expense
   c.   Gain
   d.   Asset

3. **Gain from sale of non-current asset is:**
   a.   Operating gain
   b.   Gross gain
   c.   Net gain
   d.   Non-operating gain

4. **How will you substitute the following phrase: "which increases the owners claim"?**
   a.   Loss
   b.   Gain
   c.   Expenses
   d.   Assets

5. **Spillage of liquid while in transit is**
   a.   Normal loss
   b.   Abnormal loss
   c.   Abnormal gain
   d.   None of these

6. **Pilferage of cash is:**
    a. Normal loss
    b. Abnormal loss
    c. Abnormal gain
    d. None of these

7. **Posting refers to:**
    a. Transferring entries from ledger to trial balance
    b. Transferring entries from journal to ledger
    c. Transferring entry from one page to other page
    d. All of these

8. **Doctrine of periodicity refers to**
    a. Finalising accounts at the end of certain period
    b. Preparing accounts for different periods
    c. Preparing accounts with periodic tables
    d. All of these

9. **25 % of cost refers to**
    a. $1/6^{th}$ of sales
    b. $1/5^{th}$ of sales
    c. 20% of sales
    d. Both b and c

10. **25% of sales is**
    a. 20% of cost
    b. $1/6^{th}$ of cost
    c. 33.33 % of cost
    d. None of these

11. **When cheque is not paid by the bank, it is called?**
    (a) Honored
    (b) Endorsed
    (c) Dishonored
    (d) a & b

12. **A bank reconciliation statement is prepared by?**
    (a) Banker
    (b) Accountant of the business
    (c) Auditors
    (d) Registrar

13. **Bank reconciliation is not a?**
    (a) Reconcile records
    (b) Memorandum statement
    (c) Ledger account
    (d) Procedure to provide cash book adjustments

14. **Unpresented cheques are also known as?**
    (a) Dishonoured cheques
    (b) Uncleared cheques
    (c) Outstation cheques
    (d) Issued but not sent for collection.

15. **Unfavourable balance means?**
    (a) Credit balance in the cash book
    (b) Credit balance in Bank statement
    (c) Debit balance in cash book
    (d) Debit balance in petty cash book

Answer:

1. a, 2. a, 3. d, 4. b, 5. a, 6. b, 7. b, 8. a, 9. d, 10. c, 11. c, 12. b, 13. c, 14. d, 15. a
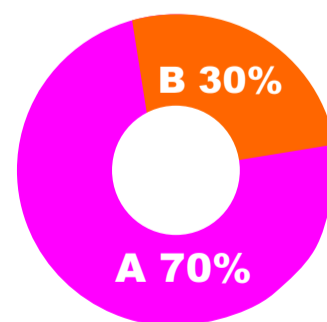
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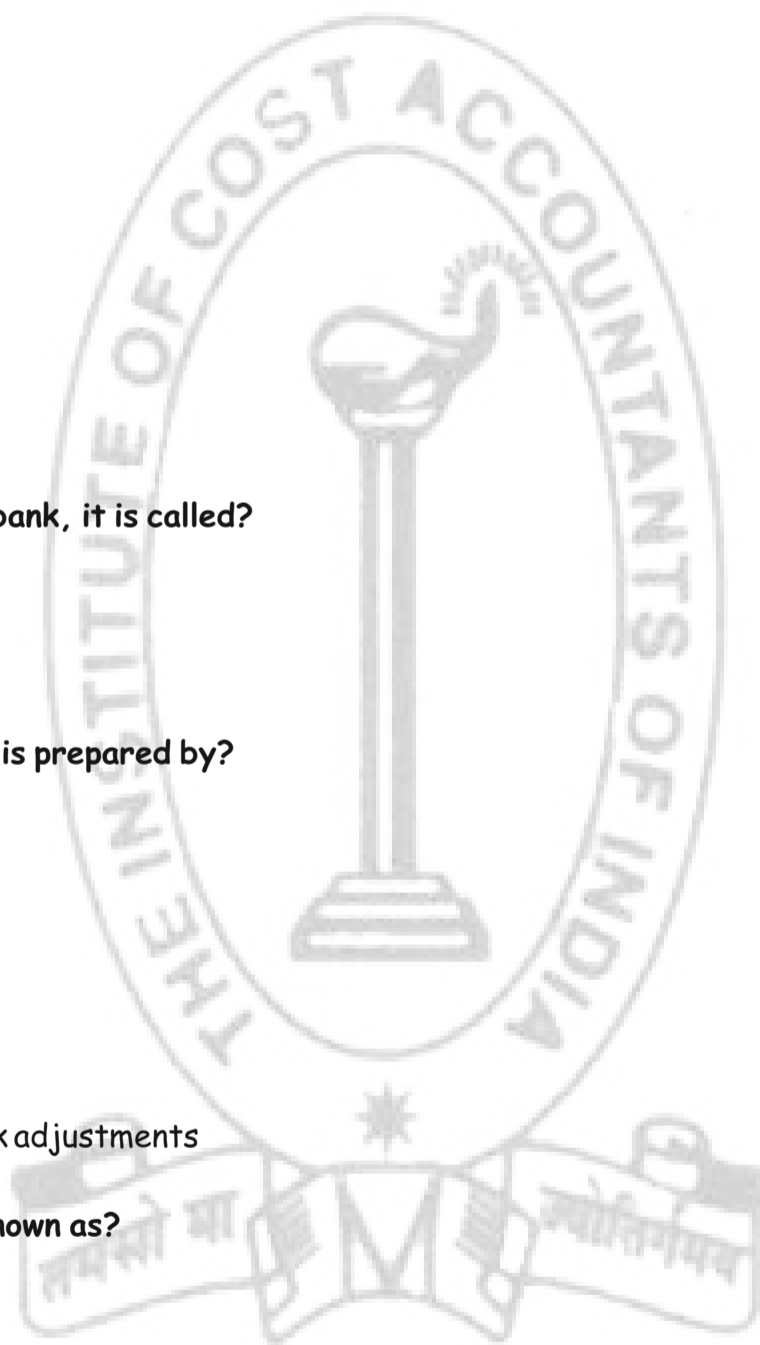
PAPER: 3

FUNDAMENTALS
OF LAWS AND ETHICS (FLE)

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Your Preparation Quick Takes

B 30%

A 70%

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.

LAWS & ETHICS

It is hoped that you keep on reading and recapitulating all that you have read for which you must prepare a time-table with time allotted for each subject – to read, write and revise .

Here are a few Tip For All of you for the next examination.
Start with a few hours of SELF ANALYSIS every day
1. PLEASE REMEMBER that you should NEVER BE OVERCONFIDENT
There are many topics, read and study all of them properly because you should never take it for granted otherwise ,while attempting questions related to those topics you would either go blank or get confused.
REVISION IS THE KEY, try to revise each and every topic as FREQUENTLY as possible.

2. ALWAYS REMAIN 100% FOCUSED
While glancing through a revisionary topic from a book, notebook or study material, never stray away by imagining things not related to that topic .
So, the best thing would be to Set Short Revision Targets which were quite difficult to achieve. For example , revise and repeat 5 topics of a SUBJECT within 30 minutes. This is only possible before exams.
That way you will be able to stay 100% focused towards studies.

3. NEVER SKIP/LEAVE TOPICS BECAUSE THEY SEEM LESS IMPORTANT TO YOU IN THIS TERM
This is one of the biggest mistakes that most of the students commit
ALWAYS REMEMBER THAT YOU MUST COVER EACH AND EVERY TOPIC.
Even if a topic seems less important , please have your concept clear so that you have a brief knowledge of that topic, so that you don't go blank if a question comes from that topic. **HAVE FAITH IN YOURSELF**

Indian Contract Act,1872 (Contd.)

Performance of Contracts

One obvious question that immediately come to mind is – *By whom is a contract to be performed ?* Here many things are to be considered – 1. There may be cases where the promisor himself has to perform the contract . Such cases involve personal skill, individual taste and specialization etc.of the promisor. The parties to the contract must expressly state about their intentions in the contract or otherwise convey their intensions as per the circumstances in the case. In all other cases, the promisor or his representative may perform as per the terms of the contract. Let us understand easily with the help of some examples : Tom promises to paint a picture for Jerry. In this case, Tom must paint the picture himself. On the other hand, if Tom promises to pay Rs.5000 to Jerry , he (Tom) can either personally pay Rs.5000 to Jerry or arrange payment of Rs.5000 through another person. It must be kept in mind that if the promise accepts performance by a Third Party, he cannot later on insist on its performance by the promisor only. Another important point to be kept in mind is that , contracts involving personal skills , comes to an end if the promisor dies, since such contracyts cannot be performed by the heirs or the legal representatives of the deceased promisor. Therefore, all other contracts not involving personal skills of the promisor, are bound to be performed by the heirs or the legal representatives of the deceased promisor. The heirs or the legal representatives are not individually liable as their liability is restricted to the assets obtained from the deceased. Lets take an example . Tom promises to deliver some goods to Jerry before 15th May,2018 against payment of Rs.10,000. Tom dies on 1st May,2015 but his representative delivers the goods before 15th May,2018. Jerry is bound to pay Rs.10,000 to Tom's representative.

Discharge of Contracts

Let us now understand **Termination or discharge of contracts**. Simply remember that when the obligation stated under a contract comes to an end, that contract is said to be terminated or discharged. Therefore, the next question that comes to mind is – **In what ways can a contract be terminated or discharged? The** following is the answer –

1. When the party to the contract, performs his promise that is called **Termination by Performance**.
2. If there is impossibility of performance, such contract can be terminated on grounds of impossibility. Suppose a singer enters into a contract to sing at a Concert against payment of a fixed amount in advance and if the singer's voice gets choked and singing is not possible, the contract can be terminated due to **Impossibility of Performance.**
3. If there is a **Breach of Contract** . Here one party to the contract fails to meet his obligations under the contract. Here breach can be immaterial but still material . For example, you placed an online order to buy a shirt and the delivery was supposed to be on

23rd January,2018 but it was delivered on 24th January,2014. The delay is immaterial ,but suppose there was an online order for Print Cartridges by a Printing factory and the urgency was intimated to the supplier , yet the delivery was delayed and caused loss of business there is definitely a Material Breach of Contract.

4. **Prior Agreement** – Contract can be terminated if the other party has a prior written agreement which calls for termination because of "Specific Reasons" and the grounds for termination must be specified. In such cases, one party must submit notice of termination in writing to the other party .

5. By **Rescission** of a contract, where the contract is terminated or cancelled because an individual – misrepresented, acted illegally or made a mistake. A contract Rescission may also take place if one party is not old enough to enter into a contract or if the party is an elderly person and too old and incapacitated to take legal decisions and enter into a contract.

6. **Lapse of time** –where the contract is not performed within a fixed or reasonable time, the contract stands discharged. Supposing A enters into a contract in February,2018 to coach B for the CMA Intermediate Examination to be held in June,2018, and accepts an advance payment. The contract stand discharged after the June,2018 Examination is over.

7. **Discharge of a contract by operation of law –** can be due to Death, Insolvency, Unauthorized material alteration of the terms of contract or where merger of inferior rights takes place due to superior rights laid under a new contract.

8. On **Completion of a contract,** once all the obligations stated in the contract are fulfilled and completed and the contract is terminated and/or discharged. However, there must be enough evidence to place before the Court of Law to prove satisfactory completion of all obligations, in the event of any dispute by the other party.

Breach of Contract

Let us recapitulate – all agreements between two or more parties, to do or not to do something, that are enforceable by law are contracts. All agreements are promises to do or provide something . If the promise is broken, there is a Breach of Contract. It may include –

I.   Failure to deliver goods and or services ;
II. Failure to complete a job ;
III. Failure to pay on time ;
IV. Supply of goods and/or services, that do not confirm to the agreement.
V.   The promisor repudiates his liability under the contract before the time of performance of the contract becomes due or if the promisor, by his own deeds disables himself from performing.This is called Anticipatory Breach of Contract. Actual Breach of Contract occurs when the promisor actually fails to perform or refuses to perform during the performance of the contract. Example : Tom agrees to deliver 100 Bags of Cement on 15th May,2018 to Jerry for Rs.15,000 . He fails to supply on 15th May,2018 .This is breach of contract.

Remedies for Breach of Contract

After a Breach of Contract takes place, the aggrieved party also called the Injured party, becomes entitled to the following reliefs :

1. The injured party is freed from all obligations under the contract.Example : Tom agrees to deliver 100 Bags of Cement on 15th May,2018 to Jerry for Rs.15,000 . He fails to supply on 15th May,2018 .This is breach of contract, therefore there is Rescission of the contract and Jerry need not pay the price.

2. The aggrieved party or the Injured party can file a suit for damages and receive compensation for any loss or damage caused due to the breach of contract.

3. If a contract is partly completed, the aggrieved party can file a suit for the price of the services performed before the breach of contract.

4. In special circumstances, the court can direct a party to perform the contract as per the agreed terms .

5. The Court can even pass an order upon a party , prohibiting him from doing anything that amounts to Breach of Contract.

Ethics and Business

One must accept and appreciate that **- Ethical Business Profit**, is *a reward to the businessman for – investing in business, for generating employment, for contributing to the growth of business at large, by abiding by the Laws of the Land and the ethical practices followed in the trade and business.*

Ethics applies to all accepted activities of the people, including those engaged in business. However, one must ethically refrain from too much greed and profiteering and from corruption at any stage.

Ethics must promote healthy practices and standards in the political, social and economic arena for bring Value-addition among individuals in the society at all walks of life while maintaining good Work-Life Balance.

Business ethics also encompasses Corporate ethics, Professional ethics, and applied ethics which deals with all aspects of ethical principles, all problems relating to moral, social and behavioral issues that one faces in the business arena and because of which the business environment often gets vitiated during conduct of business by individuals operating while operating in business organizations.

It covers matters and standard ethical practices which are expected to be followed at the required time and situation keeping social principles in mind.

It must be kept in mind that **Business is indeed aimed at making a profit** . However, it must never be forgotten that profit is actually a

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reward for doing a business but any effort to increase the profit through illegal or unethical means is not proper. Profit is the fruit derived from Capital Invested in business first and then it is the reward for the best possible entrepreneurship.

One must admit that as the business prospers, the entrepreneurs' needs and wants change and their life style also undergoes a change. However, one must not mix life with business. Therefore, the focus has to change into order to diversify and expand the business to earn more without compromising on morality and ethics. Business must be kept within the standard periphery of ethics.

That leads us to the very important question about **Character of Business.**
Businessman must never ask for too much at too short a time. Everything follows a natural pattern and profit earning is no exception. Resorting to corrupt practice can never be accepted under any situation – political, social or economic. Increasing profit earning from business can be done ethically by applying managerial skills while boosting growth while staying and adhering to the various professional code of conduct, standard practices in the society, and law of the land – the Acts, Rules and Regulations as applicable.

Business Ethics must proceed with – Skill, efficiency and diligence.

Good Business Ethical practices must –

a) **Avoid Indulgence in malpractices** – stay away from the influence of bad businessmen who do not abide to fair practices and resort to unfair trade practices and cheating etc.

b) **Help workers and labour to work with Self-Confidence** – and ensure success of their business by playing a constructive role in the company,

c) **Encourage customer satisfaction and confidence** by convincing them that they follow ethics and provide the right goods and services ,

d) **Promote business**, through a clear image of ethical business without hollow promises ,

e) **Protect consumer rights** – viz. right to health and safety, right to information, right to choose , right to be heard, right to redress grievances etc.,

f) **Look into the interests of the Employees as well as the Owner/Stakeholders** and prevent them from being exploited and, also

g) **Enable steady growth of the organization** through actual efficiency, optimum utilization of resources amid of healthy completion without defeating and damaging the competitor through unethical practices.

h) **Build a clear and clean image in the business** by impressing all that every business transaction is fair and proper and acceptable to society who will be convinced that they are not cheated and are getting the right goods and/or services at the right price and value for money.

i) **Ensure survival of the business** by respecting the demands of the end-user ethically through proper code of conduct and serving the customers and consumers satisfactorily without an eye on short term profits and ensuring that the business grows smoothly and steadily.
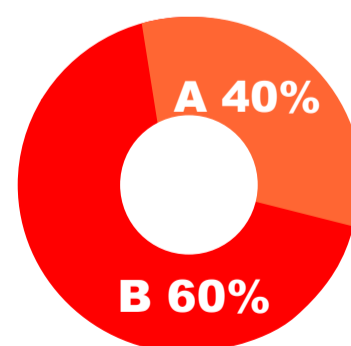
Azadi Ka Amrit Mahotsav

PAPER: 4

FUNDAMENTALS

OF BUSINESS MATHEMATICS AND STATISTICS (FBMS)

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Your Preparation Quick Takes

A 40%

B 60%

Syllabus Structure
A Fundamentals of Business Mathematics **40%**
B Fundamentals of Business Statistic **60%**

BUSINESS MATHEMATICS AND STATISTICS

In this issue we discuss MCQs on various chapters of Business Statistics

Q1. The arithmetic mean of 3,6,24 and 48 is

(a) 20.25

(b) 25.20

(c) 20

(d) 32.25

Q2. Consider the following frequency distribution

Weight in Kg	50	55	60	65	70
Number of Men	15	20	25	30	10

(a) 40kg

(b) 20kg

(c) 50kg

(d) 60kg

Q3. The algebraic sum of the deviations of 3, 6,12,16,18 from their AM is

(a) 11

(b) 0

(c) –1

(d) 1

Q4. Consider the following distribution

Age	No of people
20-25	170
25-30	110
30-35	80

16

35-40	45
40-45	40
45-50	35

The standard deviation is

(a) 8.121

(b) 7.936

(c) 2.754

(d) 4.237

Q5. Consider the following:

Value	Frequency	Value	Frequency
More than 800	14	More than 400	381
More than 700	44	More than 300	527
More than 600	96	More than 200	615
More than 500	175	More than 100	660

Arithmetic mean and standard deviation is

(a) 438.11, 139.34

(b) 411.87, 147.23

(c) 430.606, 158.55

(d) 429.37, 161.28

Q6. The mean and standard deviation of a sample of size 10 were found to be 9.5 and 2.5 respectively. Later on an additional observation became available. This was 15 and was included in the original sample. The mean and standard deviation of the 11 observations.

(a) 5.56, 1

(b) 7, 2.23

(c) 8, 1.25

(d) 10, 2.86

Q7. The geometric mean of 12, 18, 48 61 with weights 5, 3, 2 and 8 respectively is

(a) 30.85

(b) 25.82

(c) 31.45

(d) 28.12

Q8. Facet of Statistics namely computing the chance that something will occur in the future is called

(a) Statistical probability

(b) Statistical Interpretation

(c) Statistical Inference

(d) Statistical measurement

Q9. Priory probability is

(a) Subjective probability

(b) Empirical probability

(c) Classical probability

(d) Probability with Bayes' theorem

Q10. When we use relative frequency approach to establish probabilities, our probability figure

(a) Will lose accuracy as we increase the number of observations

(b) Will gain accuracy as we decrease the number of observations

(c) Will gain accuracy as we increase the number of dependent observations

(d) Will gain accuracy as we increase the number of observations

Q11. Cov (X, Y) for the following data is

X	3	4	5	6	7
Y	8	7	6	5	4

(a) -2

(b) -1

(c) 0

(d) 1

Q12. Higher level social and managerial decisions are concerned with specific unique situations rather than with a long series of identical situations. Social & managerial decision makers therefore rely mostly on

(a) Subjective probability

(b) Classical probability

(c) Empirical probability

(d) Conditional probability

Q13. Correlation coefficient between X and Y for the following data is

X	5	4	3	2	1
Y	4	2	10	8	6

(a) 0

(b) 1

(c) – 0.5

(d) 0.95

Q14. When two events happen simultaneously which of the following is true?

(a) The outcome of the first event always have an effect on the outcome of the second event

(b) The outcome of the first event may or may not have an effect on the outcome of the second event

(c) The outcome of the first event does not not have any effect on the outcome of the second event

(d) The outcome of the first event have always a 50% effect on the outcome of the second event

Q15. Sardar a taxi driver in Kolkata has found that the weather affects his customers' tipping. If it is raining his customers usually tip poorly. When it is not raining, however, they usually tip well. Which of the following is true?

(a) Tips and weather are statistically independent

(b) The weather conditions in Kolkata are not mutually exclusive

(c) P (Good tip | rain) is larger than P (bad tip | rain)

(d) None of these

Q16. If $n = 10, \Sigma x = 26, \Sigma y = -27, \Sigma x^2 = 226, \Sigma y^2 = 267, \Sigma xy = 7$ correlation coefficient is

(a) 1

(b) 0.67

(c) -1

(d) 0.44

Q17. If $\Sigma x = 30, \Sigma y = 42, \Sigma xy = 199, \Sigma x^2 = 184, \Sigma y^2 = 318, \ n = 6, \ b_{yx}$ is

(a) - 0.323

(b) - 0.567

(c) - 0.135

(d) - 0.267

Answer:

Q1	a	$(3 + 6 + 24 + 48)/4$
Q2	d	Weight in kg is x, Number of men is f. Find Σfx. So mean is $\dfrac{\Sigma fx}{\Sigma f} = \dfrac{6000}{100}$
Q3	b	Mean is 11. So $(3-11)+(6-11)+(12-11)+(16-11)+(18-11) = 0$
Q4	b	$\mu = \dfrac{\Sigma(f * x)}{\Sigma f} = \dfrac{14500}{480} = 30.21,$ $\quad \sigma^2 = \dfrac{\Sigma f(x-\mu)^2}{N} = \dfrac{30229.17}{480} = 62.98$ $\sigma = \sqrt{\sigma^2} = \sqrt{62.98} = 7.936$

Q5. (c)

The following table shows the detail computation

Value More than	Class	Cum Frequency	Frequency	Mid Value m	$d' = \dfrac{m - 450}{100}$	fd'	fd'^{2}
800	800-900	14	14	850	4	56	224
700	700-800	44	30	750	3	90	270
600	600-700	96	52	650	2	104	208
500	500-600	175	79	550	1	79	79
400	400-500	381	206	450	0	0	0
300	300-400	527	146	350	-1	-146	146
200	200-300	615	88	250	-2	-176	352
100	100-200	660	45	150	-3	-135	405
Total			660			-128	1684

Therefore

$$\bar{X} = A + \frac{\Sigma fd}{N} x\ h = 450 - \frac{128}{660} \times 100 = 430.606$$

$$\sigma = \sqrt{\frac{\Sigma fd'^2}{N} - \left(\frac{\Sigma fd'}{N}\right)^2} x\ h = \sqrt{\frac{1684}{660} - \left(\frac{-128}{660}\right)^2} \times 100 = 158.55$$

Q6. (d)

Let us suppose that the 10 old observations constitute Group-I and the only additional observation forms another group Group-II. Since the mean of one observation is the value of the observation itself and its standard deviation is always zero, hence we have $n_1 = 10, n_2 = 1$ & $\sigma_1 = 2.5, \sigma_2 = 0, \overline{X_1} = 9.5$ & $\overline{X_2} = 15$.

The values are shown in the following table:

Characteristics	Groups		Combined Group
	Group I	Group II	
No of observations	$n_1 = 10$	$n_2 = 1$	11
Mean	$\bar{X}_1 = 9.5$	$\bar{X}_2 = 15$	$\bar{X}_{12} = ?$
S.D.	$\sigma_1 = 2.5$	$\sigma_2 = 0$	$\sigma_{12} = ?$

The mean of combined group =

$$\bar{X}_{12} = \frac{n_1 \bar{X}_1 + n_2 \bar{X}_2}{n_1 + n_2} = \frac{10 * 9.5 + 1 * 15}{10 + 1} = 10$$

Again the standard deviation of the combined group is

$$\sigma_{12} = \sqrt{\frac{(n_1 \sigma_1^2 + n_2 \sigma_2^2) + (n_1 d_1^2 + n_2 d_2^2)}{n_1 + n_2}}$$

Where $d_1 = \overline{X_1} - \overline{X_{12}}$ & $d_2 = \overline{X_2} - \overline{X_{12}}$

So

$$\sigma_{12} = \sqrt{\frac{(10 * 2.5^2 + 1 * 0) + 10 * (9.5 - 10)^2 + 1 * (15)^2)}{10 + 1}} = 2.86$$

Q7. (a)

x	log x	f	f logx
12	1.079181246	5	5.395906
18	1.255272505	3	3.765818
48	1.681241237	2	3.362482
61	1.785329835	8	14.28264
Total		18	26.80684

Log G =	Sum of (flogx)/N	
	26.80684/18 =	1.489269
Antilog of 1.489269 =		30.85

Q8. (c)

Q9. (c)

Q10. (d)

Q11. (a)

	X	Y	XY
	3	8	24
	4	7	28
	5	6	30
	6	5	30
	7	4	28
Total	25	30	140
Cov	1/5(140-1/5*(25)*(30))	-2	

Q12. (a)

Q13. (c)

	X	X^2	Y	Y^2		
	5	25	4	16		
	4	16	2	4		
	3	9	10	100		
	2	4	8	64		
	1	1	6	36		
Total	15	55	30	220		
Cor	(80-1/5*15*30)/(Sqrt(55-1/5*15*15)*Sqrt(220-1/5*30*30))					
	-0.5					

Q14. (b)

Q15. (d)

Q16. (d)

Q17. (a)

$$b_{yx} = \frac{\Sigma xy - \frac{1}{n}\Sigma x * \Sigma y}{\Sigma X^2 - 1/n(\Sigma x)^2}$$

Suggestions:

The study guide needs to be read thoroughly. Supplementary readings could be made from other resources. In this issue discussions are held on problems taken from different chapters on assorted basis in MCQ pattern. These could be used as supplement to the study guide. Students should go thoroughly for clear concept on formula from Guide book on the paper 4- Fundamental of Business mathematics and Statistics written and issued by Institute on Syllabus -16.
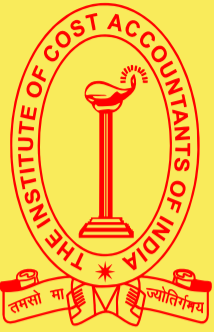
PRACTICAL
Advice

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 Excercises given in Study Note **02**

03 Assess Yourself

Appear For Examination **04**

FINISHED

SUBMISSIONS

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.

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,

We from the Directorate of Studies understand your expectations from us and accordingly we are trying to deliver some meaningful tips through various publications in soft versions like-E-bulletins, Mock Test Papers (MTPs), and we also have conducted Webinar Sessions for the benefit of the students. Supplementary and Amendments are also uploaded from time to time to keep the students updated about the recent changes made in the papers; wherever applicable.

You must be aware that India is celebrating Azadi Ka Amrit Mahotsav, which is an initiative of the Government of India to celebrate and commemorate 75 years of independence and the glorious history of its people, culture and achievements. Along with pan India, your Institute has also observed and took part in various meaningful activities throughout the year. We also expect that our students should also take part in the development of the nation and make the country proud.

"Freedom has only one motto, may our country be happy and prosperous" …….

let you all observe the message cited above.

- ❖ Certain general guidelines are listed below and which will help you in preparing for the examinations:

- ❖ Conceptual understanding and overall understanding of the subjects should be clear,

- ❖ Students are advised to go through the study material provided by the Institute meticulously,

- ❖ Students should know and learn the basic understandings of the subjects with focus on core concepts,

- ❖ Students are expected to give to the point answer which is a pre-requisite for any professional examination,

- ❖ To strengthen the answers, students are advised to answer precisely and in the structured manner,

- ❖ Proper time management is also important while answering.

Please refer the link mentioned below:

https://icmai.in/studentswebsite/index.php

GOOD LUCK
Be prepared and be successful

Few Snapshots

Glimpses of Observance of GST Day 2022 : GST in India - Poised to deliver Sustainable Growth on 06 July 2022 at Scope Complex, New Delhi

Glimpses of SAFA PAIB Committee Conference hosted by the Institute on 23rd July, 2022 at Trivandrum, Kerala.
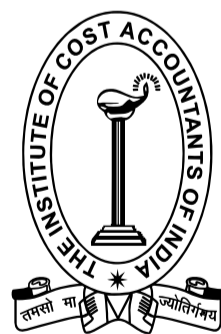

Glimpses of SAFA PAIB Committee Conference hosted by the Institute on 23rd July, 2022 at Trivandrum, Kerala.

Continuing Education Programme Committee organised a programme on 'Changing Times - Role of CMAs' on 7th July 2022 at Kolkata wherein CMA Asim Kumar Mukhopadhyay, CEO & MD, TML Smart City Mobility Solution Ltd. was the Chief Guest and Keynote speaker.

CMA P. Raju Iyer, President, ICAI and Chairman, ICMAI MARF and Shri Atul Prakash, Principal Director, Regional Training Institute, Kolkata IA&A Department exchanging MOU signed on 14th July, 2022 for training and research collaboration with each other.

Behind every successful business decision, there is always a CMA