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CONTENTS

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.

150 YEARS OF CELEBRATING THE MAHATMA
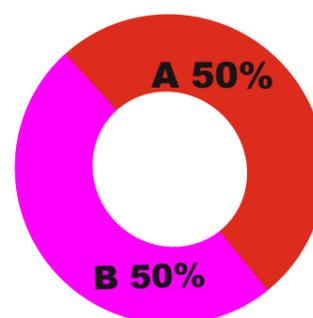
PAPER: 1, PART: I

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!! Alas, again we have been locked down and we are being forced to remain confined at home. So you can well imagine the power of corona virus. It will be wise to follow the Govt. protocol and use mask whenever you go out for very urgent work and maintain a safe distance from others. Be very careful and avoid crowd. Do not consider the lock down phase as a disadvantage. Because you can convert this to be an advantage. Now you have all the time in the world to solve the mock tests and prepare yourself for the exam. Please go through your study material thoroughly because all your questions in the exam will com from the study material only. So let us start our mock test series.

MOCK TEST

I. CHOOSE THE CORRECT ANSWER:

1. Which one of the following is the work of Macro-Economics?
   A. Formulating national policies
   B. Determining the prices of all factors of production
   C. Determining the prices of all goods produced
   D. None of the above

2. The terms 'Micro' and 'Macro' were introduced by
   A. John Maynard Keynes
   B. Paul A. Samuelson
   C. Ragnar Frisch
   D. Alfred Marshall

3. When economics is termed as a positive science?
   A. When it explains what ought to be and what not ought to be
   B. When it does not deal with value judgement
   C. When it deals with good and bad
   D. None of the above

4. Which one is a wrong formula for calculating Total cost?
   A. AC X Q = TC
   B. MC X Q = TC
   C. Summation of MC = TC
   D. None of the above

5. Which of the following will be the normal shape of the production possibility curve?
   A. Convex to the origin
   B. Concave from above
   C. Straight line downward sloping to the right
   D. None of the above

6. What will be the shape of the demand curve for a 'Giffen good'?
   A. Downward sloping to the right
   B. Upward sloping to the right
   C. Parallel to the x-axis
   D. Parallel to the y-axis

7. How do you relate the price of chicken with the demand for fish through a curve?

A. Upward rising curve to the right
B. Downward falling curve to the right
C. Parallel to the x-axis
D. Parallel to the y-axis

8. **In the long run price is governed by**
   A. Demand supply forces
   B. Marginal utility
   C. Cost of production
   D. None of the above

9. **In the long run, a firm under perfect competition earns**
   A. Only normal profit
   B. Super normal profit
   C. Negative profit
   D. Average return on capital employed

10. **If our country is passing through recession, RBI would**
    A. Increase the bank rate
    B. Sell Govt. bonds
    C. Reduce CRR
    D. None of the above

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

II. **Fill in the blanks:**

1. Money market refers to institutional arrangements which deal with short term funds. .... On the other hand deals in long term funds.
2. A bank must keep sufficient cash in hand to meet the claim of depositors, otherwise they would be ....
3. In a market of discriminating monopoly, the monopolist sells his product at a .... Price in the foreign market and at a .... Price in the domestic market.
4. .... implies setting the price low in order to gain market share. However, the price will be raised later once the market is captured.
5. .... elasticity of demand shows the relationship between % change in demand and % change in price.

KEY: 1. Capital market, 2. Insolvent, 3. Lower , higher, 4. Penetration price, 5. Price

III. **True or False:**

1. "An enquiry into the nature and causes of wealth of nations" was written by Alfred Marshall.
2. According to Lionel Robbins, economics is a science which studies human behaviour as a relationship between ends and scarce means which have alternative uses.
3. Economics is both positive and normative science.
4. What to produce, how to produce and for whom to produce are the central problems of economics.
5. The value of the elasticity of supply will be zero when the price remains constant

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

IV. **Matching:**

1. Fiscal policy	A. SDR
2. Credit creation	B. Samuelson
3. IMF	C. Oligopoly
4. Growth definition	D. Keynes
5. Selling cost	E. Commercial Bank

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

So Friends! How do you like the mock test? I hope you have enjoyed it. I also hope that you have been able to solve all the problems on your own. Please go through the study material thoroughly. Because if you do, you will find it very easy to solve all the problems. You can consult some reference books as well. "Price theory" by Watson is a very good book you can rely on. The lock down phase is not at all disadvantageous for you. Because you can always convert it into your advantage. Try to utilize this period to study hard and practice all the papers. Remember, there is no alternative to hard work. And hard work will bring you success. Best of luck!!!
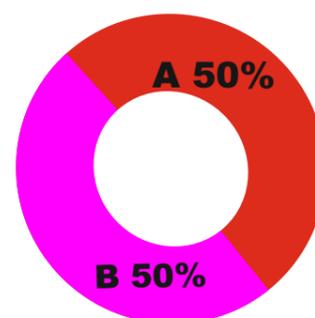
150
YEARS OF
CELEBRATING
THE MAHATMA

PAPER: 1, PART: II

FUNDAMENTALS
OF ECONOMICS & MANAGEMENT
(FEM) – MANAGEMENT

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Your Preparation Quick Takes

A 50%

B 50%

Syllabus Structure

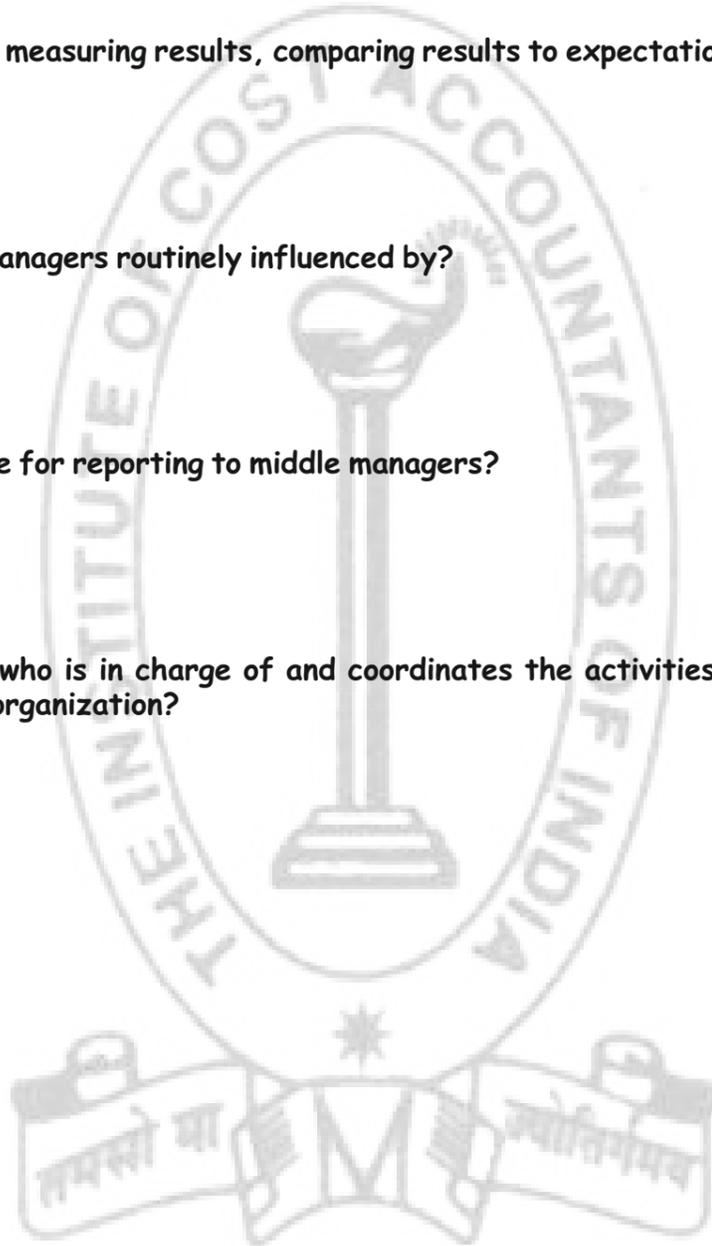A Fundamentals of Economics **50%**
B Fundamentals of Management **50%**

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. Which term best describes the process of obtaining, deploying, and utilizing a variety of essential resources to contribute to an organization's success?
   A) Planning
   B) Organizing
   C) Staffing
   D) Management

2. Which part of the management process includes measuring results, comparing results to expectations, and taking corrective action to bring results in to line?
   A) Planning
   B) Organizing
   C) Leading
   D) Controlling

3. Which management principle states that work should be divided so that each person will perform a specialized portion?
   A) Division of work
   B) Chain of command
   C) Unity of direction
   D) Unity of command

4. Which influential thought leader is known for his theory on organizational forms?
   A) John Maxwell
   B) Tom J. Peters
   C) Henry Mintzberg
   D) John P. Kotter

5. The term "core competency," was coined by which of the following influential business thinkers?
   A) W. Edwards Deming
   B) C.K. Prahalad
   C) Ken Blanchard
   D) Frederick W. Taylor

6. What two major end results are managers seeking on a daily basis?
   A) A product or service
   B) Management and efficiency
   C) Eenergy and utilities
   D) Facilities and equipment

7. Which level of management is responsible for implementing programs that are intended to carry out the broader objectives of an organization set by executives?
   A) Supervisory managers
   B) Middle managers
   C) First level managers
   D) Chief financial managers

8. A manager who possesses knowledge of the processes, equipment, and potential problems of an industry would possess what type of managerial skill?
   A) Technical
   B) Administrative
   C) Interpersonal
   D) Organizational

9. By exceeding the monthly marketing budget set for a company, a manager would fail to meet which type of performance measure?
   A) Quantity
   B) Quality and workmanship
   C) Cost and budget control
   D) Customer satisfaction

6

10. **In management, the various roles that managers are called on to perform are defined in which process?**
    A) **Management process**
    B) Executive process
    C) Business process
    D) Supervisory process

11. **Economic uncertainty, regulatory requirements, and new competitors are examples of what type of factors that affect managers?**
    A) Intrapersonal factors
    B) Internal factors
    C) Interpersonal factors
    D) **External factors**

12. **Which management function involves measuring results, comparing results to expectations, and taking corrective action?**
    A) Planning
    B) Organizing
    C) Leading
    D) **Controlling**

13. **Which type of issues are first level managers routinely influenced by?**
    A) Long range issues
    B) **Short range issues**
    C) Strategic issues
    D) Shareholder issues

14. **Which type of managers is responsible for reporting to middle managers?**
    A) Employees
    B) **Managers**
    C) Executive managers
    D) Second level managers

15. **Which title is given to an individual who is in charge of and coordinates the activities of a group of employees engaged in related activities within a unit of an organization?**
    A) **Manager**
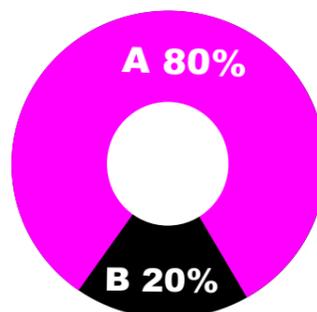   B) Employee
    C) Vender
    D) Contractor

150 YEARS OF CELEBRATING THE MAHATMA

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PAPER: 2

FUNDAMENTALS

OF ACCOUNTING (FOA)

Your Preparation Quick Takes

A 80%

B 20%

Syllabus Structure

A Fundamentals of Financial Accounting **80%**

B Fundamental of Cost Accounting **20%**

8

FINANCIAL ACCOUNTING

DISCOVER YOUR "SELF" – BE CONFIDENT

LIKE EARLIER ISSUES LET ME SHARE A STORY :

Self-confidence and a strong belief in oneself and the things that you can achieve is a strong trait that an individual can have. When a person has a good self-image, they find that they can not only accomplish their goals but they can achieve things far and above anything that they ever imagined. In other words, sometimes a person who possess a high level of self-confidence, can discover something within themselves that they might not have thought never existed.

Today's story is a great illustration of this power of self-confidence.

One of the greatest violinists of all time was named Niccolo Paganini. He was born in 1782 and he enjoyed a well-known and memorable career before his death in 1840.

One day as Paganini was about to perform before a packed opera house, he suddenly discovered that he had walked out on stage with the wrong violin. What he was holding was not his valued instrument but one that belonged to someone else. His cherished violin was made by the master violin maker, Guarneri.

Paganini was horrified and panic-stricken but knowing that he had no other choice, he began to play with all of the skill that he possessed. Everyone agreed, after the performance, that he had given a performance of a lifetime. When he finished his concert, the audience gave him a standing ovation.

After the concert, in his dressing room, he was praised and commended for his marvelous performance, Paganini replied, " Today, I learned the most important lesson in my entire career. Before today, I thought the music was in my violin but today I learned that the music is in me."

NOW YOU PROCEED :

1. **What is expense ?**
   a. **Expired cost**
   b. Exposed cost
   c. Extra cost
   d. All of these

2. **What is accounted loss ?**
   a. **Expense with benefit**
   b. Expense without benefit
   c. Loss which is unavoidable
   d. None of these

3. **What is normal loss or unaccounted loss?**
   a. Loss which is unavoidable
   b. **Loss which is avoidable**
   c. Loss by fire
   d. None of these

4. **What kind of expenditure is written in income & exp A/c**
   a. Capital expenditure
   b. **Revenue expenditure**
   c. Cash expenditure
   d. Revenue expenditure on accrual basis

5. **What is the nature of Receipts and Payments account ?**
   a. **Real**
   b. Nominal
   c. Personal
   d. None of these
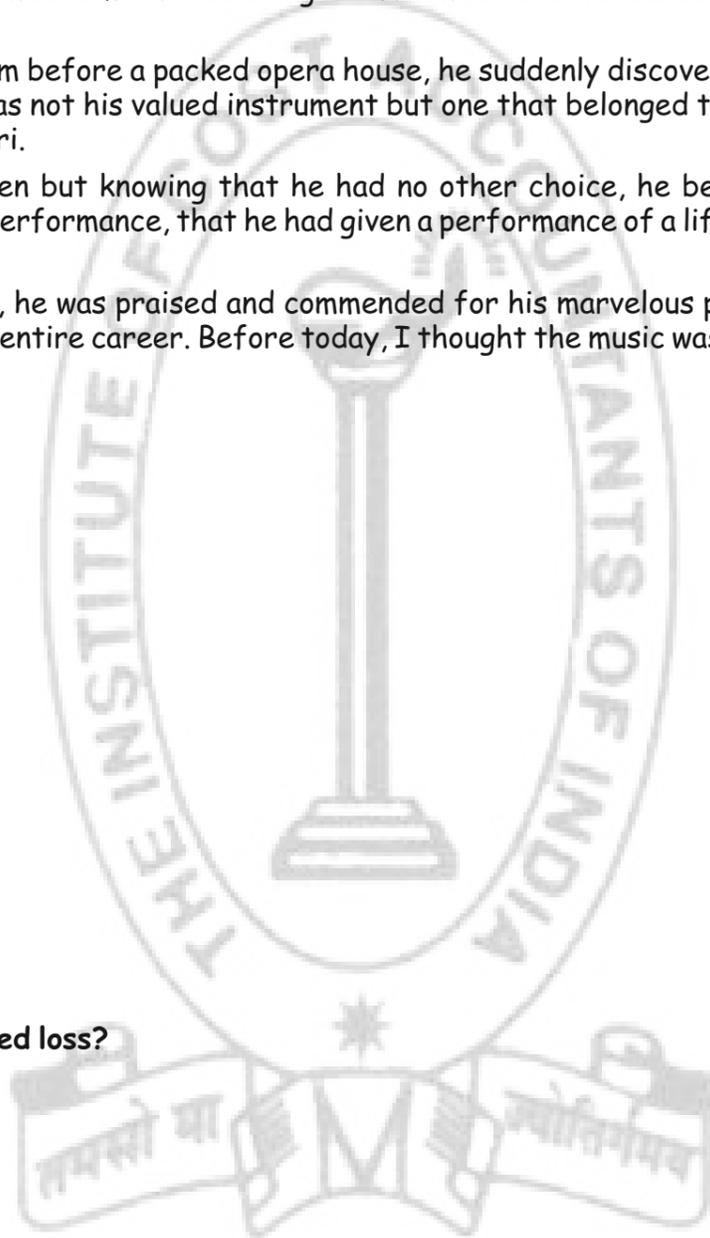
6. **What is GAAP ?**
   a.   General advanced accounting practice
   b.   General adjusted accounting practice
   c.   **Generally accepted accounting principles**
   d.   General advanced accounting principles

7. **Generally depreciation on fixed assets is calculated on which balance?**
   a.   **Opening**
   b.   Closing
   c.   Only on additional
   d. Amount realized on asset sold

8. **Bad debt recovery affects :**
   a.   Creditors
   b.   Debtors
   c.   Provisions
   d.   **Cash**

9. **Outstanding salary is :**
   a.   Nominal account
   b.   Personal account
   c.   **Representative personal account** +
   d.   None of these

10. **How do you satisfy accounting accuracy?**
   a.   By preparing balance sheet
   b.   By preparing cash book
   c.   By preparing journal
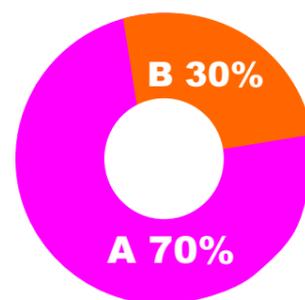   d.   **By preparing trial balance**

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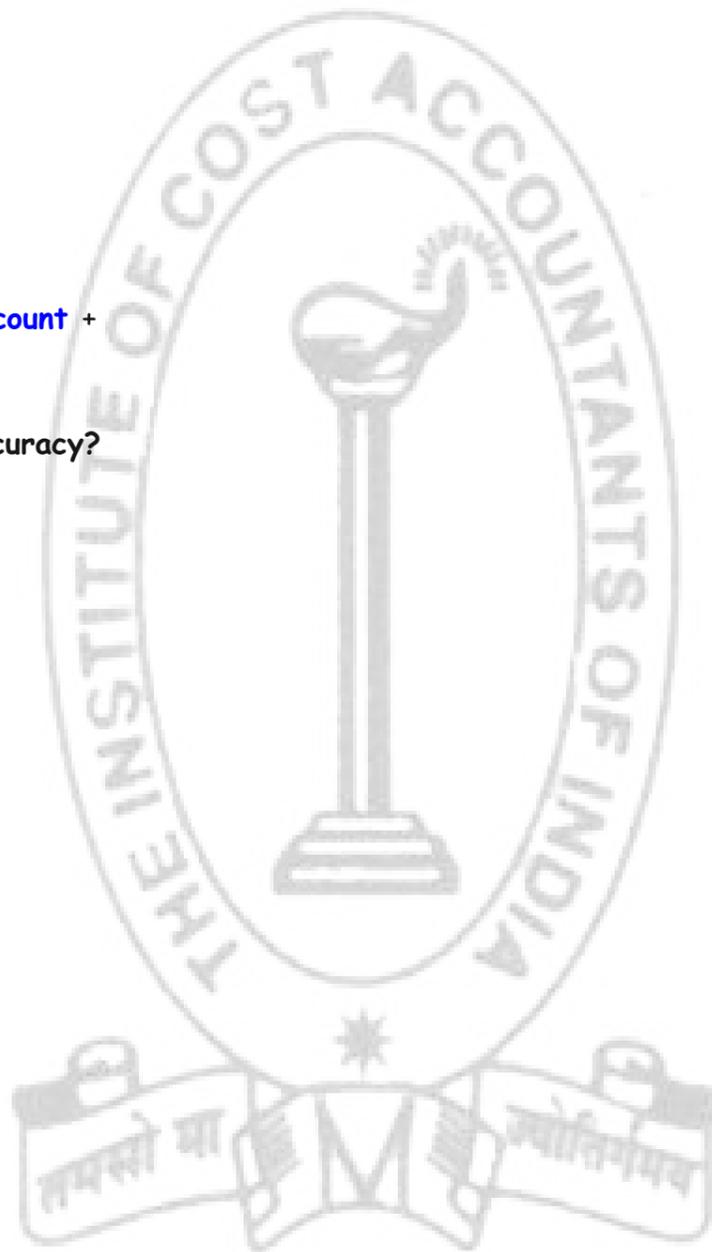
PAPER: 3

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%**

LAWS & ETHICS

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

Now, let us understand why this paper is really very important for all of you who are aspiring to be true professionals and are all eager to proudly proclaim aloud that – **Yes, behind every successful decision, there is a CMA**.

The first TIP is that you start studying the subject and raise questions to yourself first and then find your own answers. Even as a student now, you must start thinking like A Teacher.

Indian Contract Act, 1872 (Contd.)

Under **Essential Elements of Contract**, we read that there must be a Lawful Consideration. So, **what is consideration?**

Section 2(d) of the Contracts Act 1872 defines consideration. All past, present and future promise, desire to do or abstain from doing something is a consideration for the promise . For example : A agrees to sell his Motorcycle to B for Rs.15,000. For A the consideration is Rs.15,000 for the promise and for B the consideration is the Motorcycle.

The question arises – **What is past consideration ?**

This can be explained with an example : X is asked by Z to do certain special extra work which X performs in the month of December,2017. In January,2018 X is paid Rs.5000 by Z to compensate for the work done in December,2017. In this case, the consideration of X is past consideration.

Almost all contracts require consideration, so the question is - What agreements are valid without consideration ? Please read Sec.25(1), Sec.25(3) and Sec 25(explanation 2)

Section 25(1) specifies those cases where agreement without consideration is valid and those are :
1. The agreement is freely made in writing
2. The written document is registered with the Appropriate Authority
3. The agreement is made on account of natural love and affection ;
4. The parties to the agreement stand in near relation to one another.

At this point, an interesting question comes to mind – **Can a stranger to a contract sue on a contract ?**

A stranger to a contract is a person who is not a party to the contract and so he cannot go to court to enforce it. However, **if a stranger is a party to the contract, he can sue to enforce it**. For example : There is an agreement between Anil, Billu and Chand , where Anil pays money to Billu to deliver to Chand. In this case, Chand can enforce the agreement even though he did not pay any part of the consideration.

Therefore, the next question is - What are the exceptions to the rule that a stranger to the contract cannot sue upon it ?

The exceptions are as follows :
1. An agreement to create a trust can be enforced by the beneficiary;
2. A party to a contract can transfer his rights under the contract to third parties. For example : A bearer cheque drawn on an individual can be transferred to any person he wishes.
3. In case of family disputes settled by mutual agreement , where the terms of settlement are written down in a document, such Family Settlements can be enforced by those persons who were not original parties to the settlement.

It may be noted that except for the three exceptions mentioned above, a contract does not give any right upon a person who is not a party to the contract.

Now, let us appreciate that we are all in the Computerized Environment. Therefore, Offers, Acceptances and Contracts can be electronically performed. Such **e-contracts** are paperless in the electronic form -made , communicated, executed ,deployed through software systems. All the essential elements of contract are satisfied but in order to give it the legal validity, The Information Technology Act,2000 has laid regulations for such e-contracts. It requires the parties to the contract to obtain Digital Signatures from the Competent Authority and affix the digital signature instead of the conventional manual signature. Digital Signatures are legally valid and cannot be denied as the signature is in digital form and delivered electronically. In this case, the lawful process of negotiation, acceptance of the terms and the final Contract is through E-mails which are valid in law.

Sale of Goods Act,1930 (Contd.)

let us know **the difference between a Condition and a Warranty .**

Sec.12 of the Sale of Goods Act defines conditions and warranties.
In a Contract of Sale, the terms or the stipulations laid , with reference to purchase and sale of goods, can be conditions or warranties.

We must understand that, a **Condition** is a stipulation which is **Essential** to the main objective/purpose of the contract. Any breach/violation of such condition/s may call for repudiation of the contract.

On the other hand, a **Warranty** is also a stipulation but such stipulation is **Collateral** to the main objective/purpose of the contract. Any breach/violation of such warranty may call for **Claim for damages,** but the contract can neither be repudiated nor can the goods be rejected.

So, we understand that both Condition and Warranty are terms/stipulations laid in a Contract of Sale, but whether the terms/stipulations are conditions or stipulations, depends on how the terms are laid, meant and construed to be understood in the contract. In many cases it is seen that a term in a contract is called as warranty but is actually a condition laid and such interpretations are left for the courts to decide.

Sec.11 of the Sale of Goods Act , lays that a stipulation as to time of payment, must not be deemed as conditions unless the terms of contract throws some indication to such intentions. Both conditions and warranties can be indicated in writing or may be implied on case to case basis, depending on the terms of the contract.

Suppose a contract of sale specifies a condition that goods sold shall be repaired at the premises of the buyer . This condition can be waived by the buyer who decides to carry the goods to the repair shop himself for repairs. In such a case the condition can be treated as a warranty. A buyer may even decide to treat a breach of condition as a breach of warranty and in such cases the buyer cannot repudiate or reject the goods but can accept the goods and sue for damages suffered .

That takes us to the question – **what are the implied conditions and warranties in a contract of sale of goods ?**

Please read Sections 14 to 17 of the Sale of Goods Act. **The implied conditions and warranties in a contract of sale of goods** are as follows :

Implied Conditions –

1. Title – that the seller has the right to sell the goods and that he shall have the right to sell the goods at the time when the property in the goods is to pass.
2. Description – that the goods shall correspond to the description – physical characteristics, mention of trade mark, brand, etc. under which the sale agreement was made or those goods are normally sold.It is expected that the goods will be same as the goods described.
3. Sample – that goods shall be supplied as per the sample shown and agreed upon .That the buyer will get the opportunity of comparing the goods supplied with the earlier sample shown and the quality of the goods supplied matches with the quality of the sample shown and that the defects , if any, cannot be detected apparently on reasonable examination and inspection.
4. Sample and Description – where goods are sold by sample as well as by description, it is expected that the goods will correspond both - with the sample and the description.
5. Fitness or Quality – Where the buyer tells the seller about the purpose for which the goods are required, and relies on the seller's skill or judgment , it is implied that the seller agrees to the implied condition of fitness and description of the goods. Where the supplier deals in goods of such description laid by the buyer, it is implied that the goods shall be of desired quality and fit for sale – whether manufactured or traded by the supplier .However, if the goods are bought after inspection by the buyer, it will be implied that the inspection of the goods bought ought to have detected and revealed the defects.

Implied Warranties –

1. That the buyer shall have quiet possession of the goods, that is, the vendor has the right to transfer the goods ,
2. That the goods are free from any charge or encumbrances in favour of any third party , not known to the buyer or not revealed to the buyer at the time of the contract.
3. That a warranty as to fitness for a particular purpose may be annexed to a contract of sale by normal practice in trade or a custom or usage.

Now, let us discuss about – **Performance of the Contract of Sale**

In any contract of sale, there has to be two parties – the **Buyer and the Seller** . Both are expected to perform as per agreed terms – The **Seller to deliver the goods and the buyer to accept the goods and pay the price.**

The seller is obliged to deliver the goods as per the terms of contract at the specified – time, place ,quantity and quantity . **The buyer is obliged to accept the goods and pay the agreed price.** Depending on the terms of the contract, the payment can be taken in advance, or on stipulated period of credit and the delivery too can be off-the-shelf , ex-godown, free-on-board, staggered etc.

Performance of a contract depends on two criteria – **timely delivery by the supplier and agreed payment terms of the buyer.** The seller shall be ready to give possession of the goods in exchange for payment of the price and the buyer to be ready to take possession of the goods from the seller in exchange for price.

1) **Delivery can mean Physical or actual transfer of possession from one person to another**
2) **Delivery can be through different modes – viz.**
   a)   **Actual Delivery** – where the goods are physically delivered to the buyer by the seller – directly or through an agent.
   b)   **Symbolic** – just as we see in reality shows where the keys of a motor car is handed over to the winner
   c)   **Constructive** – where the delivery order is issued to a third party for making delivery – Example – A Company selling Potatoes ,issuing Delivery Order to the Cold Storage in a different location asking them to deliver certain Number of Potato Bags to the buyer on receipt of the Issue Slip.

Auction Sale :

In an auction sale, there is an Auctioneer who is appointed by the owner of a property to sell property by inviting bids publicly and the property is sold to the highest bidder. However, the Auctioneer warrants the following :-

1. That the auctioneer has authority to sell
2. That the auctioneer has no knowledge that property under sale on behalf of his principal has any defects as to title ; and
3. The buyer shall get quiet title to the possession of the property against payment of a price.

The question arises, what could be the **Rules regarding Sales by auction ?**

Section 64 of the Sale of Goods Acts lays the rules which are as follows :
1. Where the goods are put to sale in lots, each lot is to be subject to separate contract of sale;
2. The sale is complete only after the customary fall of the hammer when the auctioneer repeats the final offer **three times and** announces the completion of the sale. Until the fall of the hammer the bidder may retract his/her bid. The fall of the hammer amounts to acceptance of the offer.
3. The Seller may expressly reserve his right to bid in the auction. Such a sale has to be notified in advance. If such a right is expressly reserved, seller or any other person on his behalf may, bid at the auction. It may be kept in mind that without any express reservation and advance notification, the seller or any person on his behalf, cannot bid at an auction as it shall not be lawful and considered as fraudulent by the buyer acting on behalf of the seller.
4. The sale may be notified to be subject to a Reserved Price , that is, a price below which the goods/property will not be sold. The Reserve Price can be kept secret.
5. Where the seller resorts to pretended bidding, just to raise the price, the sale becomes voidable at the opinion of the buyer.
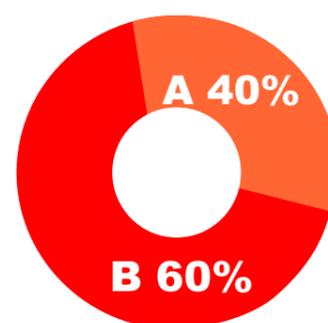
150 YEARS OF CELEBRATING THE MAHATMA

PAPER: 4

FUNDAMENTALS
OF BUSINESS MATHEMATICS AND STATISTICS (FBMS)

CMA Ankan K Bandyopadhyaya
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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%**

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 are placing some problems on assorted basis

Q1:
Calculate the standard deviation of the following distribution:

Age	No of people
20-25	170
25-30	110
30-35	80
35-40	45
40-45	40
45-50	35

Ans:

Formula used (Direct method)

$$\sigma^2 = \frac{\Sigma f (x - \mu)^2}{N} = \frac{\Sigma f x^2}{N} - \mu^2$$

$$\sigma = \sqrt{\sigma^2} = \sqrt{\frac{\Sigma f (x - \mu)^2}{N}} = \sqrt{\frac{\Sigma f x^2}{N} - \mu^2}$$

Where:

. σ^2 = Population variance;

. σ = Population standard deviation;

. f = frequency of each of the class;

. x = class mark of each class;

. μ = population mean;

. N = size of the population;

The following table shows how to apply these equations to find the variance and standard deviation from the given grouped data.

Class	Class Mark (x)	Frequency (f)	(f) * (x)	Mean μ	$x - \mu$	$(x - \mu)^2$	$f(x - \mu)^2$
20-25	22.5	170	3825	30.20833	-7.70833	59.41840278	10101.1285
25-30	27.5	110	3025	30.20833	-2.70833	7.335069444	806.857639
30-35	32.5	80	2600	30.20833	2.291667	5.251736111	420.138889
35-40	37.5	45	1687.5	30.20833	7.291667	53.16840278	2392.57813
40-45	42.5	40	1700	30.20833	12.29167	151.0850694	6043.40278
45-50	47.5	35	1662.5	30.20833	17.29167	299.0017361	10465.0608
Total		480	14500				30229.1667

Σ

$$\mu = \frac{\Sigma (f \times x)}{\Sigma f} = \frac{14500}{480} = 30.21$$

$$\sigma^2 = \frac{\Sigma f (x - \mu)^2}{N} = \frac{30229.17}{480} = 62.98$$

$$\sigma = \sqrt{\sigma^2} = \sqrt{62.98} = 7.936$$

The above problem we could also solve by indirect method by formula where d = x – A & A is the assumed mean

$$\sigma = \sqrt{\frac{\Sigma fd^2}{N} - \left(\frac{\Sigma fd}{N}\right)^2}$$

With assumed mean A = 32.5 the calculation is

Class	Class Mark (x)	Frequency (f)	Mean A = 32.5	d = x − A	fd	fd²
20-25	22.5	170	32.5	-10	-1700	17000
25-30	27.5	110	32.5	-5	-550	2750
30-35	32.5	80	32.5	0	0	0
35-40	37.5	45	32.5	5	225	1125
40-45	42.5	40	32.5	10	400	4000
45-50	47.5	35	32.5	15	525	7875
Total		480			-1100	32750

$$\sigma = \sqrt{\frac{32750}{480} - \left(\frac{-1100}{480}\right)^2} = \sqrt{68.23 - 5.25} = 7.936$$

Q2.

For a group of 10 items, $\Sigma X = 452$, $\Sigma X^2 = 24270$, and Mode = 43.7; Find the Pearson's coefficient of skewness

Ans :

$$\text{Mean}\ (\bar{X}) = \frac{\Sigma X}{n} = \frac{452}{10} = 45.2$$

$$\text{S.D.}\ (\sigma) = \sqrt{\frac{\Sigma X^2}{n} - \left(\frac{\Sigma X}{n}\right)^2} = \sqrt{\frac{24270}{10} - (45.2)^2} = 19.59$$

Pearson's coefficient of skewness :

$$Sk = \frac{\text{Mean - Mode}}{\text{Standard Deviation}} = \frac{45.2 - 43.7}{19.59} = 0.08$$

Q3.

$\sum_{x=1}^{20} x = 54120$; While computing this it was observed that two entries were wrongly

entered as 850 and 320 instead of 580 and 230. Correct value of $\bar{X}$ is

a) 2688;
b) 2746.5;
c) 2720;
d) 2662;

Ans : (a) Correct $\sum_{x=1}^{20} x = 54120 - 850 - 320 + 580 + 230 = 53760$. Hence $\bar{x} = \frac{53760}{20} = 2688$

Q4.

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. Find out the mean and standard deviation of the 11 observations.

Ans: 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

$n_1 = 10$, $n_2 = 1$ & $\sigma_1 = 2.5$, $\sigma_2 = 0$, $\bar{X_1} = 9.5$ & $\bar{X_2} = 15$.

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 =

$$\overline{X_{12}} = \frac{n_1\overline{X_1} + n_2\overline{X_2}}{n_1 + n_2} = \frac{10 \times 9.5 + 1 \times 15}{10 + 1} = 10$$

Again the standard deviation of the combined group is

$$\sigma_{12} = \sqrt{\frac{\left(n\sigma_1^2 + n_2\sigma_2^2\right) + n\left(d_1^2 + n_2d_2^2\right)}{n_1 + n_2}}$$

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

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

Q5.
In general probability is
(a) A numerical value between 0 and 1, exclusive, describing the absolute possibility an event will occur
(b) A numerical value between 0 and 1, inclusive, describing the absolute possibility an event will occur
(c) A numerical value between 0 and 1, exclusive, describing the relative possibility an event will occur
(d) A numerical value between 0 and 1, inclusive, describing the relative possibility an event will occur

Ans: (d)

Q6.
Calculate the coefficient of correlation between X and Y series from the following data:

$$\sum_{i=1}^{12}\left(X_i - \overline{X}\right)^2 = 360, \sum_{i=1}^{12}\left(Y_i - \overline{Y}\right)^2 = 250, \sum_{i=1}^{12}\left(X_i - \overline{X}\right)\left(Y_i - \overline{Y}\right) = 225$$

Ans:

We know that $r = \dfrac{\Sigma xy}{\sqrt{x^2}\sqrt{y^2}}$ where $x = X - \overline{X}$ & $y = Y - \overline{Y}$

So $r = \dfrac{225}{\sqrt{360}\sqrt{250}} = 0.75$

Q7.
Find the co-efficient of correlation from the following data:

X	1	2	3	4	5	6	7
Y	6	8	11	9	12	10	14

Ans:

We know that $r = \dfrac{\Sigma xy}{\sqrt{x^2}\sqrt{y^2}}$ where $x = X - \overline{X}$ & $y = Y - \overline{Y}$

	X	Y	$x = X - \overline{X}$	$y = Y - \overline{Y}$	x^2	y^2	xy
	1	6	-3	-4	9	16	12
	2	8	-2	-2	4	4	4
	3	11	-1	1	1	1	-1
	4	9	0	-1	0	1	0
	5	12	1	2	1	4	2
	6	10	2	0	4	0	0
	7	14	3	4	9	16	12
Σ	28	70	0	0	28	42	29
Mean	4	10					

So $r = \dfrac{29}{\sqrt{28}\sqrt{42}} = 0.8457$

Q8.

For the data below calculate the a) Range; b) Interfractile range between the third and seventh deciles;

98	69	58	87	73	89	83	65	82	63
88	91	77	68	94	86	96	89	98	85
55	59	87	84	59	82	73	95	68	81

Ans: First arrange the data in ascending order as given in the following table:

55	59	68	73	81	83	86	88	91	96
58	63	68	73	82	84	87	89	94	98
59	65	69	77	82	85	87	89	95	98

a) Range = 98 – 55 = 43

b) There are 30 no of observations. If we arrange these 30 observations into 10 equal parts (decile) the arrangement will be again placed below:

55	59	68	73	81	83	86	88	91	96
58	63	68	73	82	84	87	89	94	98
59	65	69	77	82	85	87	89	95	98

3rd Decile   7th Decile

b) Interfractile range between third and seventh decile = 87 – 69 = 18

Q9.
Calculate correlation coefficient from the following results:

$N = 10, \Sigma x = 140; \Sigma y = 150; \Sigma(x - 10)^2 = 180;$

$\Sigma(y - 15)^2 = 215; \Sigma(x - 10)(y - 15) = 60$

Ans:

Let $dx = x - 10$ & $dy = y - 15$

Form the given data we find

$\Sigma dx = \Sigma(x - 10) = \Sigma x - 10N = 140 - 10 \times 10 = 40$

$\Sigma dy = \Sigma(y - 15) = \Sigma y - 15N = 150 - 15 \times 10 = 0$

$\Sigma dx^2 = \Sigma(x - 10)^2 = 180; \Sigma dy^2 = \Sigma(y - 15)^2 = 215$

$\Sigma dx \, dy = \Sigma(x - 10)(y - 15) = 60$

$$r = \frac{\Sigma dxdy - \dfrac{\Sigma dx \times \Sigma dy}{N}}{\sqrt{\left[\Sigma dx^2 - \dfrac{(\Sigma dx)^2}{N}\right] \times \left[\Sigma dy^2 - \dfrac{(\Sigma dy)^2}{N}\right]}}$$

$$r = \frac{60 - \dfrac{40 \times 0}{10}}{\sqrt{\left[180 - \dfrac{(40)^2}{10}\right] \times \left[215 - \dfrac{(0)^2}{10}\right]}} = 0.915$$

Q10.
For the following frequency distribution which one of the following is correct?
(a) The distribution forms a symmetrical curve
(b) The distribution forms a positively skewed curve
(c) The distribution forms a negatively skewed curve

| Class	Frequency
0-10	1
10-20	10
20-30	35
30-40	60
40-50	85
50-60	100
60--70	85
70-80	60
80-90	35
90-100	10
100-110	1

Ans: (a) If we plot the data we get the following and hence the answer

Chart Title
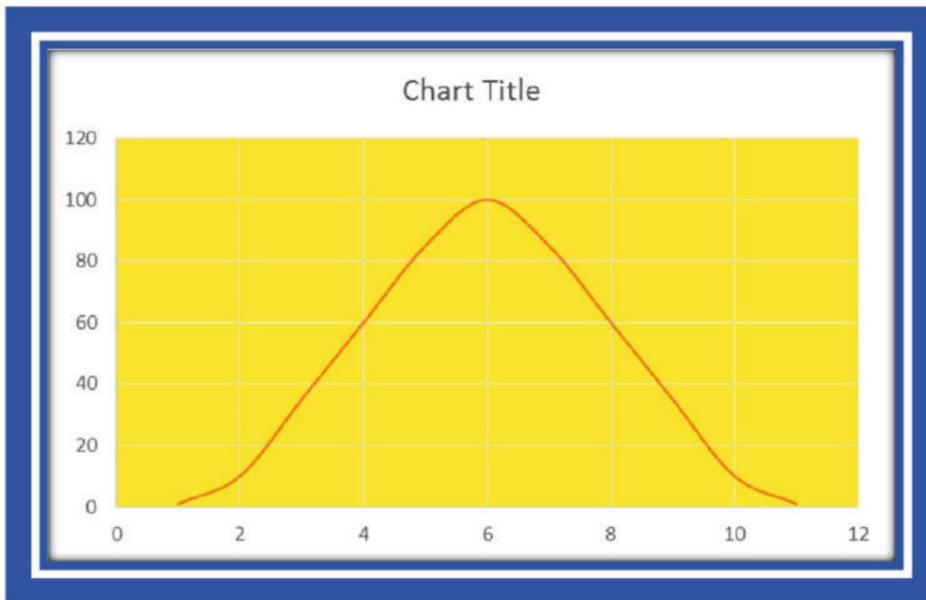
Suggestions:

The study guide needs to be read thoroughly. Supplementary readings could be made from other resources. This issue is based totally on teachings imparted in study guide issued by the institute. Standard books could be referred for additional expertise. Detail discussions on different formulae are not done here for which Guide book could be referred. 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.
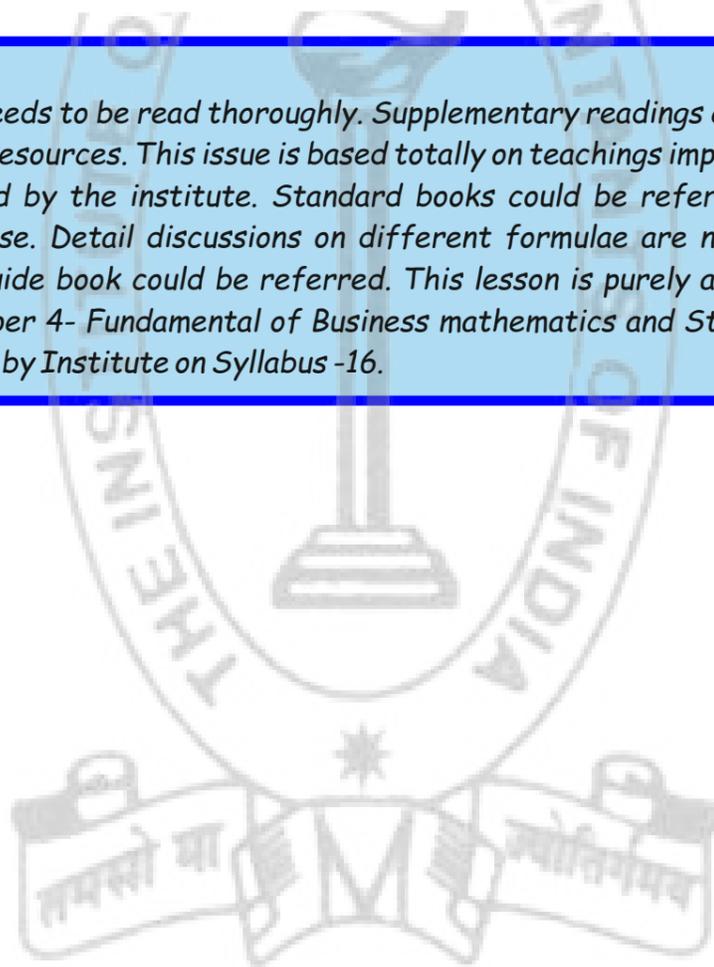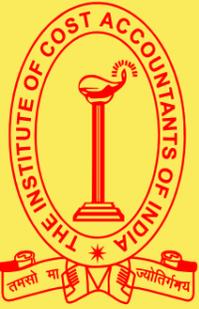
PRACTICAL
Advice

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

150 YEARS OF CELEBRATING THE MAHATMA
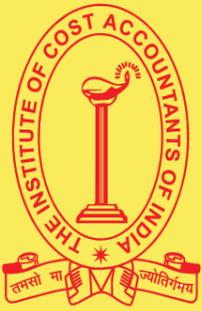
Submissions

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.
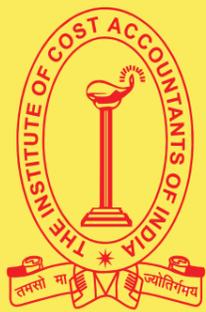
Message from
Directorate of Studies

Dear Students,

Passing the exam is a happy event. Congratulations on all that you have accomplished! There is no secret of success. It is the result of preparation, hard work and learning from failure. Well done! It is clear that the future holds great opportunities for you.

Those who could not pass, failing in an exam does not mean failing in life. All of us face failure at one time or another. Try to focus your attention on the importance of perseverance and mind it that dedication and determination plays the lead role in shaping a person's life.

We from the Directorate of studies know your expectations from us and accordingly we are trying to deliver some meaningful tips through the publications of monthly E-bulletins. Other than this we are trying to help you through, Mock Test Papers (MTPs), Work Books, MCQs and we have conducted Webinar sessions.

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!

The Institute is pleased to inform that the University Grants Commission (UGC) Ministry of Education, Govt. of India has announced that CMA qualification be Considered equivalent to PG Degree.

GOOD LUCK

Be Prepared and Get Success;

Disclaimer:
Although due care and diligence have been taken in preparation and uploading this E-bulletin, the Institute shall not be responsible for any loss or damage, resulting from any action taken on the basis of the contents of this E-bulletin.

150 YEARS OF CELEBRATING THE MAHATMA

विश्वविद्यालय अनुदान आयोग
University Grants Commission
(शिक्षा मंत्रालय, भारत सरकार)
(Ministry of Education, Govt. of India)

बहादुरशाह जफ़र मार्ग, नई दिल्ली-110002
Bahadur Shah Zafar Marg, New Delhi-110002

दूरभाष Phone : कार्यालय Off : 011-23238865

ई-मेल E-mail : ssingh.ugc@nic.in

ज्ञान-विज्ञान विमुक्तये

डॉ. सुरेन्द्र सिंह
संयुक्त सचिव

Dr. Surender Singh
Joint Secretary

सत्यमेव जयते

D.O.No.9-35/2016 (CPP-II)   **March, 2021**

1 5 MAR 2021

Sub: To consider CA/CS/ICWA qualification equivalent to PG Degree for appearing in UGC-Net

Sir/ Madam,

UGC had received requests from the Institute of Chartered Accountants of India, the Institute of Company Secretaries of India and the Institute of Cost Accountants of India to consider the qualification being awarded by them, i.e., Chartered Accountant (CA), Company Secretary (CS) and Cost and Works Accountants (ICWA) respectively, equivalent to Post Graduation Degree.

To consider this, a Committee was constituted by the UGC. The Commission, in its 550th meeting held on 18th February, 2021 considered the recommendation of the Expert Committee and resolved as under:

"CA/CS/ICWA qualification be considered equivalent to PG Degree."

This is for your kind information.

With kind regards,

Yours sincerely,

(Dr. Surender Singh)
Joint Secretary

The President
The Institute of Cost Accountants of India
3, Institutional Area
Lodhi Road
New Delhi- 110 003

Few Snapshots

Dignitaries sharing the screen with Shri Arjun Ram Meghwal Hon'ble Union Minister of State for Parliamentary Affairs and Heavy Industries & Public Enterprises during National Corporate Laws Summit. Left to Right CMA Neeraj D. Joshi, CCM; CMA Mahesh Shah, Past President; Shri Debarshi Duttagupta, MD, East India Pharmaceuticals Works Limited; Shri Arjun Ram Meghwal, Hon'ble Union Minister, CMA Dr. Ashish P. Thatte, Chairman, Corporate Laws Committee; CMA Biswarup Basu, President; CMA Chittaranjan Chattopadhyay, CCM; CMA Amal Kumar Das, Past President; CMA Vijender Sharma, CCM

Shri Arjun Ram Meghwal Hon'ble Union Minister of State for Parliamentary Affairs and Heavy Industries & Public Enterprises is giving his live online speech on occasion of inauguration of National Corporate Laws Summit.


CMA Biswarup Basu, President facilitating Shri Debarshi Duttagupta, MD, East India Pharmaceuticals Works Limited on the occasion of National Corporate Laws Summit organised at Kolkata on 26th February 2021. Sharing the dias is CMA Dr. Ashish P. Thatte, Chairman Corporate Laws Committee and CMA Neeraj D. Joshi, Central Council Member.

From Left to Right CMA Balwinder Singh, Immediate Past President and Council Member, Shri S.K. Kaushik, CAO (AR), Indian Railways, Shri Naresh Salecha, Member (Finance) Railway Board, CMA Biswarup Basu, President, CMA P. Raju Iyer, Vice-President, CMA Chandra Wadhwa, Past President, CMA B.B. Goyal, Advisor ICWAI MARF, CMA J.K. Budhiraja, CEO ICWAI MARF, Ms. Tripti Guraha, Exeuctive Director, (S & E), Indian Railways, Sh. Abhishek Kumar, CPM (AR), Indian Railways

Presentation of Final Report on Performance Costing System in Indian Railways at Rail Bhawan, New Delhi on 19th February, 2021 by CMA Biswarup Basu, President, ICAI to Shri Naresh Salecha, Member (Finance), Railway Board.
From Left to Right CMA Balwinder Singh, Immediate Past President and Council Member, Shri S.K. Kaushik, CAO (AR), Indian Railways, Shri Naresh Salecha, Member (Finance) Railway Board, CMA Biswarup Basu, President, CMA P. Raju Iyer, Vice-President, CMA Chandra Wadhwa, Past President, CMA B.B. Goyal, Advisor ICWAI MARF, CMA J.K. Budhiraja, CEO ICWAI MARF.

Behind every successful business decision, there is always a CMA
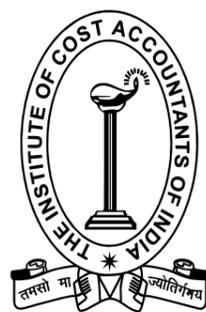
THE INSTITUTE OF COST ACCOUNTANTS OF INDIA

(Statutory body under an Act of Parliament)

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