TOLL FREE 18003450092 / 1800110910

150 YEARS OF CELEBRATING THE MAHATMA

CMA Student
E - Bulletin

FOUNDATION

FOLLOW US ON
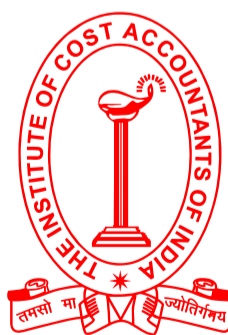
Behind every successful business decision, there is always a CMA

150 YEARS OF CELEBRATING THE MAHATMA

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
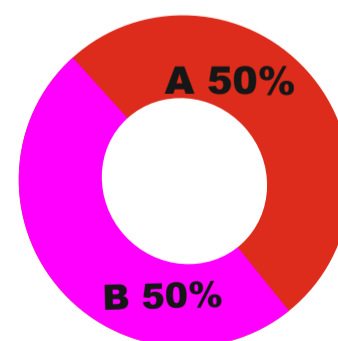
PAPER: 1, PART: I

FUNDAMENTALS

OF ECONOMICS & MANAGEMENT

(FEM) - ECONOMICS

Dr. Bibekananda Raychaudhuri
Associate Professor,
Department of Economics,
N.S.O.U., Kalyani, W.B.
He can be reached at:
brchaudhuri@gmail.com

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 keeping fine. But beware of the KORONA virus. Winter is round the corner and winter is the most favourite season of Korona virus. It is a dangerous disease and for Heaven's sake do not take it lightly. Try to remain indoors. If there is an urgent work , then only you move out. But you have to take proper precaution for that. Use at least two masks to protect your nose and mouth and keep a distance of at least two metres from all and sundry because you never know who is the carrier of this dangerous virus around you.

Let us get down in our routine business of solving mock test papers.

I. CHOOSE THE CORRECT ANSWER

1. **If the price elasticity of demand is infinity, the demand curve is**
   A. Perfectly inelastic
   B. Perfectly elastic
   C. Unit elastic
   D. None of the above

2. **Who wrote the book 'An enquiry into the nature and causes of wealth of nations'?**
   A. Alfred Marshall
   B. John M Keynes
   C. Adam Smith
   D. John S Mill

3. **The shape of the PPF curve is**
   A. S-shaped
   B. Concave to the origin
   C. Convex to the origin
   D. None of the above

4. **If the shape of the demand curve is rectangular hyperbola, what will be the value of the price elasticity of demand?**
   A. Equal to one
   B. Greater than one
   C. Less than one
   D. None of the above

5. **The equilibrium condition of the firm under perfect competition in the short run is**
   A. Price = Average cost
   B. Price = Average variable cost
   C. Price = Marginal cost
   D. None of the above

6. **The equilibrium condition of the industry under monopoly is**
   A. MR = MC
   B. Price = MC
   C. MR = AC
   D. None of the above

7. **The equilibrium condition of the firm under monopolistic competition is**

A.   MR = AC
B.   MR = MC
C.   Price = MC
D.   None of the above

8. **The equilibrium condition of the firm under discriminating monopoly is**
   A.   MC1 + MC2 = MR
   B.   MR1 + MR2 = MC
   C.   AR1 + AR2 = MC
   D.   None of the above

9. **The other name of monopolistic competition is**
   A.   Product differentiation
   B.   Product discrimination
   C.   Product distancing
   D.   None of the above

10. **The monopolist has**
    A.   Upward rising supply curve
    B.   Downward falling supply curve
    C.   No supply curve
    D.   None of the above

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

II. FILL IN THE BLANKS

1. Division of labour and specialization are possible more in ……………..scale production
2. If AC = MC, then the average cost curve is ………………
3. Market economy is ……………….   ……………………….
4. Central Bank enjoys the exclusive power of …………………… issue
5. Money demanded for purchasing goods is called ………….. demand for money

KEY: 1. Large, 2. Horizontal, 3. Perfect competition, 4. Note, 5. Transactions

III. TRUE OR FALSE

1. In Indian money market there is a multiplicity and disparity of interest rates.
2. Variable reserve ratio can not control credit creation
3. According to Keynes, the rate of interest cannot decide the value of money
4. Average product is at its maximum when AP = MP
5. Excess supply will lead to a rise in price

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

IV. MATCHING

1. Historical method	A. Inelastic demand
2. Implicit cost	B. Oligopoly
3. Interdependence	C. 91 days
4. Durable goods	D. Inductive method
5. Treasury Bills	E. Interest on own money

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

Friends, I hope you have enjoyed solving the mock test questions. Please do not consult the keys till you have solved the entire question paper. This will give you a rough idea on your overall preparation. Do not forget to go through the Study Material, because all your questions in the final exam will come from the Study Material only. All the best!!
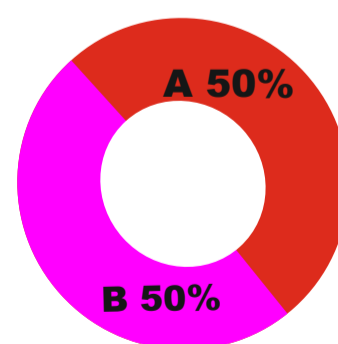
150
YEARS OF
CELEBRATING
THE MAHATMA

PAPER: 1, PART: II

FUNDAMENTALS

OF ECONOMICS & MANAGEMENT
(FEM) – MANAGEMENT

CMA (Dr.) Sumita Chakraborty
Additional Director,
Research & Studies
She can be reached at:
research.hod@icmai.in
studies.addldir1@icmai.in

Your Preparation Quick Takes

A 50%

B 50%

Syllabus Structure

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

MANAGEMENT

1. In management process, the most misinterpreted word is
   (A) Organizing
   (B) Delegating
   (C) Controlling
   (D) Planning

2. Who is the person you have to give importance under the company's checklist before making call to the consultant
   (A) Managers
   (B) Employees
   (C) Customer
   (D) All of the above

3. The word_____denotes a function, a task, a discipline
   (A) Management
   (B) Leadership
   (C)Motivation
   (D) None of the above

4. Who said, "Management is a multiple purpose organ that manages a business, manages a manager and manages workers and work"?
   (A) Harold Konntz
   (B) Peter Drucker
   (C) Kenneth O 'Donell
   (D) Anonymous

5. The factors coming under philosophy of scientific management are
   (A) Co-operation
   (B) Maximum output
   (C) Harmony
   (D) All of the above

6. Learning organizations are adaptive to their_____environment
   (A) Internal
   (B) External
   (C) Work
   (D) None of the above

7. Costliness of the _____ is the overriding factor determining the extent of decentralization
   (A) Decision
   (B) Staffing
   (C) Controlling
   (D) Managing

8. Advantage of delegation of authority results in prompt _____
   (A) Understanding
   (B) Decision making
   (C) Both (A) and (B)
   (D) None of the above

9. The non-financial type of motivators would be
   (A) Encouragement
   (B) Freedom
   (C) Recognition
   (D) All of the above

10. What does a mission statement specify that the organization will achieve?
   (A) Goals
   (B) Profit
   (C) Both (A) and (B)
   (D) None of the above

11. Communication barrier(s) in the international environment is (are)
(A) Loss by transmission
(B) Loss by poor retention
(C) Poor listening
(D) All of the above

12. What does a mission statement specify that the organization will achieve?
(A) Goals
(B) Profit
(C) Both (A) and (B)
(D) None of the above

13. _____ is the result of human limitation to the span of management
(A) Delegation
(B) Satisfaction
(C) Motivation
(D) Development

14. The following is (are) the element(s) of control
(A) Authority and knowledge
(B) Guidance and direction
(C) Constraint and restraint
(D) All of the above

15. Management is said to be the combination of three factors, arts, science and the third is
(A) Profession
(B) Authority
(C) Communication
(D) None of the above

16. Limitation of control is (are)
(A) External factors
(B) Fixing of responsibility
(C) Internal factors
(D) Both (A) and (B)

17. MBO was invented by _____.
(A) Peter Drucker
(B) Koontz & O 'Donell
(C) Henry Fayol
(D) None of the above

18. Management is said to be the combination of three factors, arts, science and the third is
(A) Profession
(B) Authority
(C) Communication
(D) None of the above

19. One of the popular forecast is
(A) Technological
(B) Economic
(C) Demand
(D) None of the above

20. _____ is a tool for corporate governance
(A) Management
(B) Communication
(C) Coordination
(D) All of the above
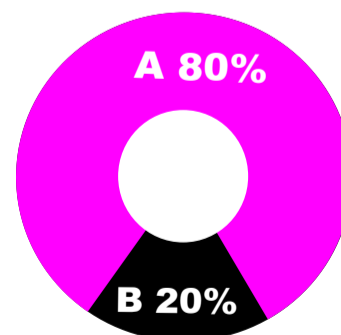
150 YEARS OF CELEBRATING THE MAHATMA
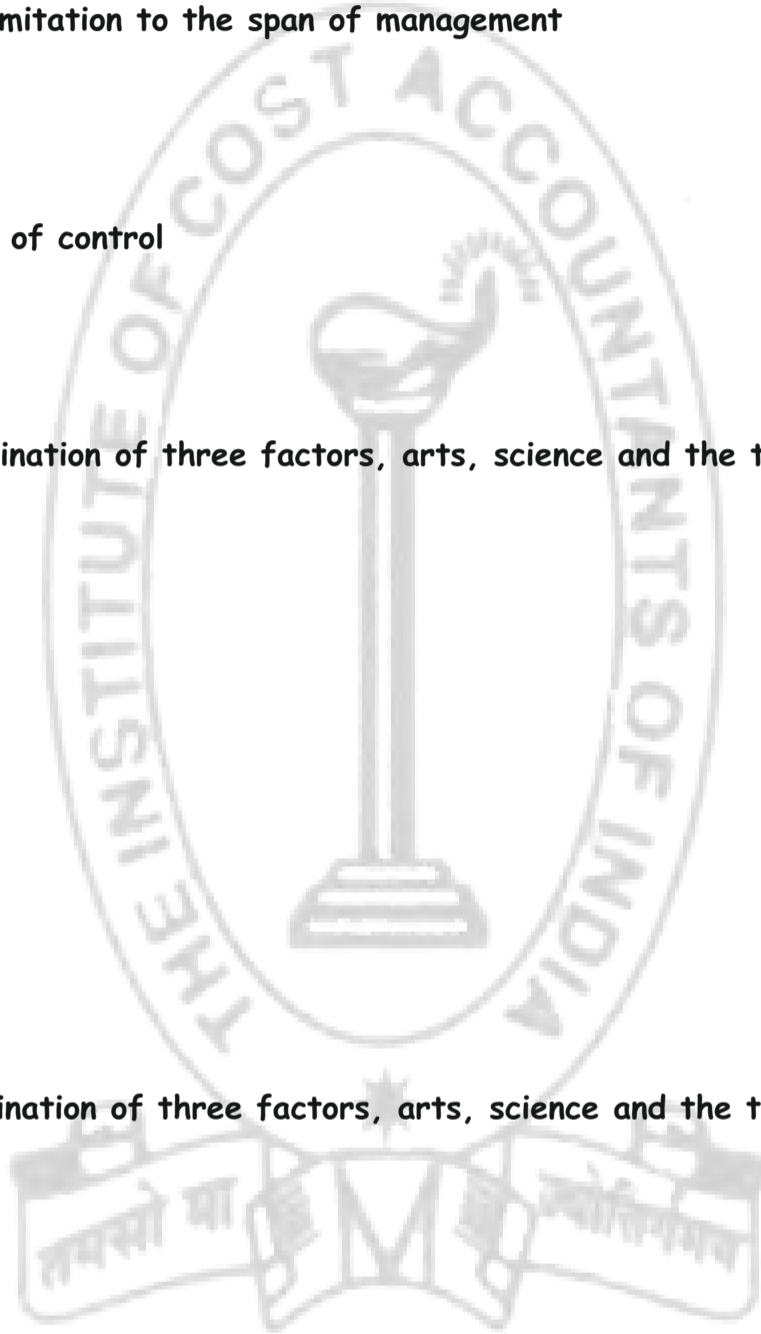
PAPER: 2

FUNDAMENTALS

OF ACCOUNTING (FOA)

CMA (Dr.) Nibir Goswami
Associate Professor in Commerce
Vidyasagar Mahavidyalaya, W.B.
He can be reached at:
drnibirgoswami@gmail.com

Your Preparation Quick Takes

A 80%

B 20%

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.

FINANCIAL ACCOUNTING

"In ancient times, a king asked his men to place a boulder on a roadway. He then hid in the bushes, and watched to see if anyone would move the boulder out of the way. Some of the king's wealthiest merchants and courtiers passed by and simply walked around it.

Many people blamed the King for not keeping the roads clear, but none of them did anything about getting the stone removed.

One day, a peasant came along carrying vegetables. Upon approaching the boulder, the peasant laid down his burden and tried to push the stone out of the way. After much pushing and straining, he finally managed.

After the peasant went back to pick up his vegetables, he noticed a purse lying in the road where the boulder had been. The purse contained many gold coins and note from the King explain that the gold was for the person who removed the boulder from the road."

Never be escapist
Never be lazy
Never be a criticizer
Never avoid hurdles

The real success and real opportunity always lie under such boulder in your life. Just fight to move that and see what is waiting for you.

Wish you all a grand success.

Here in this issue I put a simple task for you:

1. According to which concept it is assured that the business will last for long time :
   a. accounting entity concept
   b. going concern concept
   c. money Measurement Concept
   d. dual aspect concept

2. Royalty is an
   a. Agreement
   b. Contract
   c. Mutual action
   d. None of these

3. The modern system of accounting owes to
   a. AICPA
   b. Luca Pacioli
   c. GAAP
   d. None of these

4. Interest on drawings is charged on
   a. Capital
   b. Liability
   c. Asset
   d. None of these

5. Any irrecoverable portion of debtors is known as
   a. Bed Debt
   b. Doubtful debt
   c. Provision for bad debt
   d. Provision for doubtful debt

6. Accounting Provide information on
   a. An income for managers
   b. Company's tax liability for a particular year
   c. Financial conditions of an institution
   d. All of the above

7. The long term assets that have no physical existence, rights that have value is known as
   a. Fixed assets
   b. Tangible assets
   c. Fictitious assets
   d. None of these

8. The account that records expenses and losses
   a. Personal account
   b. Real Account
   c. Nominal account
   d. None of the above

9. Return evidence in support of a business transaction is called
   a. Journal
   b. Ledger
   c. Ledger posting
   d. Voucher

10. The following are the types of journal
    a. Purchase journal
    b. Sales journal
    c. Cash journal
    d. All of the above

11. The ratio that measures the ability of the firm to meet the short term obligations out of its short-term resources
    a. Liquidity ratio
    b. Leverage ratio
    c. Financial ratio
    d. Profitability ratio

12. What is the main objective of financial accounting
    a. To earn profit
    b. To prepare balance sheet
    c. To prepare both P L account and balance sheet
    d. To prepare trial balance

13. Which of the following is related to scientific system of maintaining account
    a. Single entry
    b. Contra entry
    c. Dual entry
    d. Double entry

14. Which of the following defines pending salary account
    a. Natural personal account
    b. Official personal account
    c. Representative personal account
    d. Real account

15. Investment is a
    a. Real account
    b. Personal account
    c. Representative personal account
    d. None of the above

16. Trading account is a
    a. Personal account

b.   Real account
c.   Nominal account
d.   None of these

17. **All revenue eraned by a business is credited to**
   a.   Manufacturing account
   b.   Trading account
   c.   Profit and loss account
   d.   None of the above

18. **The following asset have definite share for identity and existence**
   a.   Fictitious assets
   b.   Current assets
   c.   Tangible assets
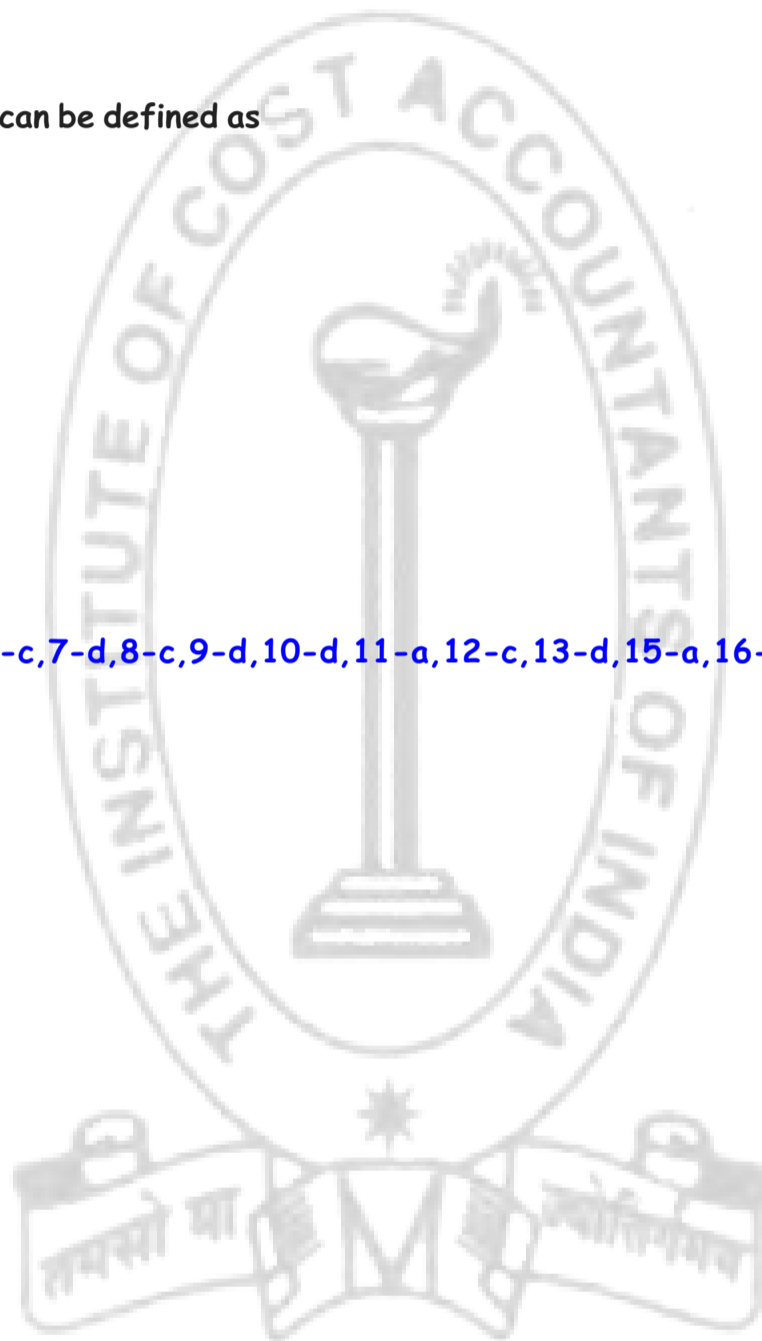   d.   Intangible asset

19. **interest on capital of a business can be defined as**
   a.   Expense
   b.   Income
   c.   liability
   d.   Asset

20. **Interest on capital is**
   a.   Capital profit
   b.   Loss
   c.   Donation
   d.   None of these

Answer key: 1 – b,2-a,3-b,4-a,5-a,6-c,7-d,8-c,9-d,10-d,11-a,12-c,13-d,15-a,16-c,17-c,18-c,19-a,20-d.
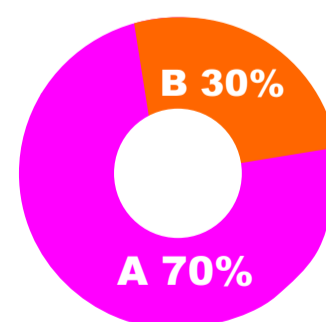
150
YEARS OF
CELEBRATING
THE MAHATMA

PAPER: 3

FUNDAMENTALS

OF LAWS AND ETHICS (FLE)

CA Partha Ray
He can be reached at:
prapray@rediffmail.com

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 .

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**.   With Mission CMA in mind, the students are advised to study this paper with a practical approach, as if the points concern you and you are given to deal with it as a professional. As a CMA in the making whether you decide to get employed or be self-employed and employ people, you will have to deal with Offers and Acceptances legally and establish Legal relationship for lawful consideration and perform your professional duties. Keeping that in mind, you have to study this subject seriously.

The first TIP is that you must start thinking like A Teacher. You must start studying the subject and raise questions to yourself and find your own answers.

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

Let us recapitulate something we read earlier in The Indian Contracts Act,1872 :

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.

Let us revise something more about Ethics -

Business Ethics is applicable within the periphery of a business circle and environment. It encompasses the behavior of individuals within business organizations, giving top priority to Business Interests. In this context, one must remember **the 3 C's of Business Ethics , which are** –

        a) Compensation,
        b) Competency and
         c) Character.

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 must proceed with – Skill, efficiency and diligence.

Good Business Ethical practices must –

a)   Avoid Indulgence in malpractices,
b)   Help workers to work with Self-Confidence,
c)   Encourage customer satisfaction and confidence,
d)   Promote business,
e)   Protect consumer rights,
f)   Look into the interests of the Employees as well as the Owner/Stakeholders and also
g)   Enable steady growth of the organization amid of healthy completion.

150 YEARS OF CELEBRATING THE MAHATMA

PAPER: 4

FUNDAMENTALS
OF BUSINESS MATHEMATICS AND STATISTICS (FBMS)

CMA Ankan K Bandyopadhyaya
He can be reached at:
abanerjee8533@gmail.com

Your Preparation Quick Takes

A 40%

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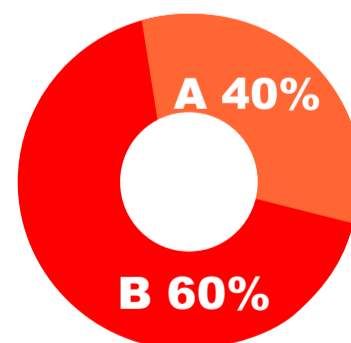
Syllabus Structure
A Fundamentals of Business Mathematics **40%**
B Fundamentals of Business Statistic **60%**

> **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 will discuss some conventional & MCQ type problems on Business Mathematics& Statistics as recapitulation

Q1. If mth term of an AP is $\frac{1}{n}$ and nth term is $\frac{1}{m}$, m ¹ n, show that the first term is equal to the common difference.

Ans:
Let a denote the first term and d the common difference. So by question we can write

$$\frac{1}{n} = a + (m-1)d \ \& \ \frac{1}{m} = a + (n-1)d$$

$$\text{Or } \frac{1}{n} - \frac{1}{m} = (m-1)d - (n-1)d$$

$$\text{Or } \frac{m-n}{mn} = md - d - nd + d$$

$$\text{Or } \frac{m-n}{mn} = (m-n)d$$

$$\text{Or } d = \frac{1}{mn}$$

Now we can write $a = \frac{1}{n} - (m-1)d = \frac{1}{n} - (m-1)\frac{1}{mn} = \frac{1}{n} - \frac{m}{mn} + \frac{1}{mn} = \frac{1}{mn} = d$

Q2. Because of heavy rain on Sunday average rainfall of a city for the week increased to 0.7 inch from the average rainfall 0.2 inch measured from Monday to Saturday. The rainfall on Sunday was-

(a) 2.4 inch;
(b) 2.6 inch;
(c) 3.2 inch;
(d) 3.7 inch

Q3. For a group of 10 items, åX = 452, åX^2 = 24270, and Mode = 43.7;

Find the pearson's coefficient of Skewness

Ans:

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

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

Pearson's coefficient of skewness:

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

Q4. In a fraction $\frac{a}{b}$

(a) The numerator a is called the antecedent of the ratio and denominator b is called the consequent of the ratio
(b) The numerator a is called the consequent of the ratio and denominator b is called the antecedent of the ratio
(c) The antecedent a is called the numerator of the ratio and consequent b is called the denominator of the ratio
(d) The consequent a is called the numerator of the ratio and antecedent b is called the denominator of the ratio

Q5. If $a` = 1 + c^a + c^{2a} + c^{3a} + \dots\dots\dots\dots\dots \infty$ (0 < c < 1)

And $b` = 1 + c^b + c^{2b} + c^{3b} + \dots\dots\dots\dots \infty$ (0 < c < 1)

Then prove that $c = \frac{\left(a` - 1\right)^{\frac{1}{a}}}{a} = \frac{\left(b` - 1\right)^{\frac{1}{b}}}{b}$

Ans:

By question we can write $a` = 1 + c^a + c^{2a} + c^{3a} + \ldots\ldots\ldots \infty = \dfrac{1}{1 - c^a}$ [from sum of infinite GP series]

Similarly $b` = 1 + c^b + c^{2b} + c^{3b} + \ldots\ldots\ldots \infty = \dfrac{1}{1 - c^b}$

Now $\dfrac{(a` - 1)^{\frac{1}{a}}}{a} = \dfrac{\left(\dfrac{1}{1 - c^a} - 1\right)^{\frac{1}{a}}}{\dfrac{1}{1 - c^a}} = \dfrac{\left(\dfrac{1 - 1 + c^a}{1 - c^a}\right)^{\frac{1}{a}}}{\dfrac{1}{1 - c^a}} = \dfrac{(c^a)^{\frac{1}{a}}}{1} = c$

Similarly $\dfrac{(b` - 1)^{\frac{1}{b}}}{b`} = c$

Q6. For the ratio X: Y

(a) The duplicate ratio is 2X : 2Y

(b) The duplicate ratio is $\left(\dfrac{X}{2}\right) : \left(\dfrac{Y}{2}\right)$

(c) The duplicate ratio is $\left(X^2\right) : \left(Y^2\right)$

(d) The duplicate ratio is $\sqrt{X} : \sqrt{Y}$

Q7. In a recent meeting of union members supporting Mr X for union president, X's leading supporter said "chances are good" that X will defeat the single opponent facing him in the election

a) What are the events that could take place with regard to the election?
b) Is your list collectively exhaustive? Are the events in your list mutually exclusive?
c) Disregarding the supporter's comments and knowing no additional information, what probabilities would you assign to each of your events?

Ans: Outcomes are: (1) Mr X win, (2) Mr X lost, (3) Mr X and his opponent each get same no of votes;
b) List above is collectively exhaustive and events are mutually exclusive;
c) Probability of each event is 1/3

Q8. For the data below calculate the a) Range; b) Inter fractile 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

18
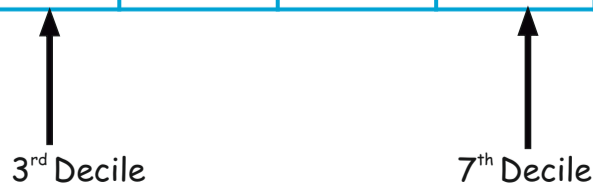
b) Inter fractile range between third and seventh decile = 87 - 69 = 18

Q9. In two factories A and B engaged in the same industry in the area, the average weekly wages (in rupees) and the standard deviation are as follows:

Factory	Average	Standard Deviation	No of employees
A	35.5	5	476
B	28.5	4.5	524

(i) Which factory, A or B, pays out a larger amount on weekly wages?
(ii) Which factory, A or B, has greater variability in individual wages?

Ans:
From the question we could write

n_A = no of employees in factory A = 476

n_B = no of employees in factory B = 524

$\overline{X_A}$ = Average weekly wage in factory A = 35.5

$\overline{X_B}$ = Average weekly wage in factrory B = 28.5

σ_A = Standard Deviation of weekly wage in factory A = 5

σ_B = Standard Deviation of weekly wage in factory B = 4.5

(i)

Total weekly wages for factory A = $n_A \times X_A$ = 476 × 35.5 = 16898

Total weekly wages for factory B = $n_B \times X_B$ = 524 × 28.5 = 14934

(ii)

To measure the variability we have to compute coefficient of vartiation.

$$\text{Coefficient of variation (C.V)} = \frac{\text{Standard Deviation}}{\text{Average}} \times 100$$

$$CV_A = \frac{5}{35.5} \times 100 = 14.08\%$$

$$CV_B = \frac{4.5}{28.5} \times 100 = 15.79\%$$

Q10. $\uparrow^{20}_{x-1} x$ = 54120; While computing this it was observed that two entries were wrongly

entered as 850 and 320 intead of 580 and 230. Correct value of $\overline{x}$ is

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

Q11. For certain X and Y series which are correlated, the two lines of regression are:
5X – 6Y + 90 = 0 and 15X – 8Y – 130 = 0

Find which the regression equation of Y on X and which is that of X on Y? Find the means of the two series and the co-relation coefficient between them.

Ans:
The two regression line intersects each other at Mean of the two series.

From first equation we could have $X = \frac{1}{5} (6Y - 90) = 1.2Y - 18$

Putting this value in 2nd equation we have

15(1.2Y - 18) - 8Y - 130 = 0

Or, 18Y - 270 - 8Y - 130 = 0

Or, 10Y = 400

Or, Y = 40

So, X - 1.2 × 40 - 18 = 30

Therefore Mean of the two series is $\overline{X}$ = 30, $\overline{Y}$ = 40

Let us suppose 1st equation is the equation of line of regression of Y on X and the 2nd equation is that of X on Y

So from 1st equation we can write 6Y = 5X + 90

Or, $Y = \dfrac{5}{6}X + \dfrac{90}{6}$

So, $b_{YX} = \dfrac{5}{6}$

Similarly from 2nd equation we can write 15X = 8Y + 130

Or, $X = \dfrac{8}{15}Y + \dfrac{130}{15}$

So $b_{XY} = \dfrac{8}{15}$

Therefore $r^2 = b_{YX} \cdot b_{XY} = \dfrac{5}{6} \cdot \dfrac{8}{15} = \dfrac{40}{90}$

Since both the regression coefficients are positive, r must be positive and we take r = 0.67

If we had assumed that the 1st equation is the regression of X on Y and 2nd equation is the regression of Y on X we get

$b_{XY} = \dfrac{6}{5}$ & $b_{YX} = \dfrac{15}{8}$

Therefore $r^2 = b_{YX} \cdot b_{XY} = \dfrac{6}{5} \cdot \dfrac{15}{8} = \dfrac{90}{40} > 1$, not a feasible solution

Q12. 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

Q13. Consider the following distribution:

	Distribution A	Distribution B
Mean	100	90
Median	90	80
Standard Deviation	10	10

(i) Distribution A has the same degree of the variation as distribution B
(ii) Both distributions have the same degree of skewness. True false? Give reasons.

Ans:
Coefficient of variance (for distribution A) = $\dfrac{\sigma A}{\overline{X}_A}$ = $\dfrac{10}{100}$ 10% = 10%

Coefficient of variance (for distribution B) = $\dfrac{\sigma A}{\overline{X}_A}$ = $\dfrac{10}{90}$ 11.11%

Since C.V of (B) > C.V. of (A), the distribution B is more variable than the distribution A. Thus the given statement that the distribution A has the same degree of variation as distribution B is false.
Karl Pearson's coefficient of skewness for distribution A and B is given by

$$Sk\ (A) = \dfrac{3(\text{Mean - Median})}{\sigma} = \dfrac{3\ (100\ -\ 90)}{10} = 3$$

$$Sk\ (B) = \dfrac{3\ (\text{Mean - Median})}{\sigma} = \dfrac{3\ (90\ -\ 80)}{10} = 3$$

Thus the given statement that both distributions have same degree of skewness is true.

Q14. There are four person named A, B, C, & D. A is a sales person whereas B, C, D are students. A collected sales figures for his region and B, C, D used these data in order to study sales pattern. Which one of the following is correct?
(a) B uses secondary data
(b) A & B both are using primary data
(c) A, B, C, D all are using secondary data
(d) B, C, D are using primary data

Q15. The range of the marks from 1 to 100 is grouped into ten classes or groups viz: 1 – 10, 11-20 and so on. The class interval is
(a) 5
(b) 8
(c) 9
(d) 10

Answers to objective questions

Q2	d
Q4	a
Q6	c
Q10	a
Q14	a
Q15	d

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 and on recapitulation of some older problems. Standard books could be referred for additional expertise to attend conventionalquestions. 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.
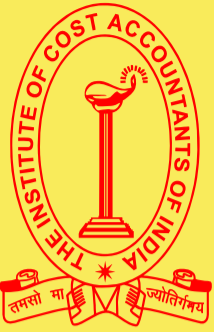
PRACTICAL
Advice

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

02 Solve Excercises given in Study Note

03 Assess Yourself

04 Appear For Examination

FINISHED
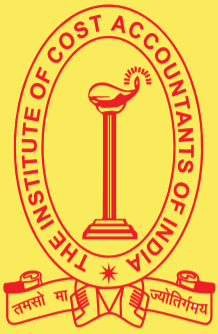
SUBMISSIONS

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.

23
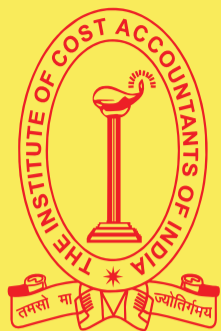
Message from
Directorate of Studies

Dear Students,

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!

GOOD LUCK

Be Prepared and Get Success;

150 YEARS OF CELEBRATING THE MAHATMA

Few Snapshots

CMA Vijender Sharma, Chairman, International Affairs Committee and PD & CPD Committee along with CMA B.B. Goyal, Advisor, ICWAI MARF & Former Addl. Chief Adviser (Cost), Ministry of Finance, GoI and CMA S. M. Gomes, Director Studies of the Institute met with H.E. Dr. Roger Gopaul, High Commissioner for the Republic of Trinidad and Tobago on 1st December 2020 to discuss the proposal submitted by the Institute to impart Cost & Management Accounting Course in Trinidad and Tobago.

CMA Biswarup Basu, President, CMA P.Raju Iyer, Vice-President, CMA Balwinder Singh, Immediate Past President of the Institute extending greetings to Shri Rajesh Verma, Secretary to the Government of India, Ministry of Corporate Affairs on 21st September 2020.
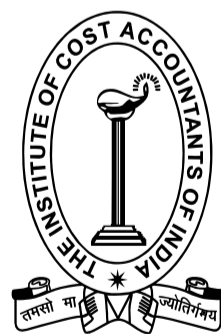

CMA Biswarup Basu, President along with CMA P. Raju Iyer, Vice-President, CMA Chandra Wadhwa, Past President and CMA B.B. Goyal, Former Addl. Chief Adviser, Ministry of Finance, GoI extending greetings to Shri Naresh Salecha, Member Finance, Railway Board on 14th October 2020.

CMA Biswarup Basu, President, CMA P.Raju Iyer, Vice-President of the Institute extending greetings to Shri Manoj Pandey, Joint Secretary to the Government of India, Ministry of Corporate Affairs on 21st September 2020.

CS Ashish Garg, President, ICSI along with CS Manish Gupta, Council Member, ICSI and CS Asish Mohan, Secretary, ICSI visited Delhi office of the Institute to meet CMA Biswarup Basu, President, CMA P Raju Iyer, Vice President and CMA Balwinder Singh, Immediate Past President of the Institute.

Behind every successful business decision, there is always a CMA