

**ECONOMICS FOR ENGINEERS
(HMTS 3201)**

Time Allotted : 3 hrs

Full Marks : 70

Figures out of the right margin indicate full marks.

*Candidates are required to answer Group A and
any 5 (five) from Group B to E, taking at least one from each group.*

Candidates are required to give answer in their own words as far as practicable.

**Group – A
(Multiple Choice Type Questions)**

1. Choose the correct alternative for the following: **10 × 1 = 10**
- (i) In every transaction there must be
(a) only debit (b) only credit
(c) equal debit and credit (d) unequal debit and credit.
- (ii) At zero level of activity, semi-variable cost is
(a) total fixed component (b) total variable component
(c) zero (d) none of these.
- (iii) Capital invested by a trader in business is shown as _____ in his books of accounts.
(a) Asset (b) Income (c) Expense (d) Liability
- (iv) Which of these items is used to prepare the trial balance?
(a) Ledger account (b) Balance sheet
(c) Cash account (d) Journal.
- (v) The primary function of commercial banks includes
(a) regulating interest rate (b) issuing coins
(c) providing cash credit to common people (d) none of these.
- (vi) Debit the receiver and credit the giver is the golden rule of
(a) personal account (b) nominal account
(c) real account (d) management account.
- (vii) SLM is NOT a method of depreciation in which
(a) depreciation is calculated on the original cost of the asset
(b) annual depreciation charge remains fixed during the life of the asset
(c) the cost of the asset is spread uniformly over the life of the asset by writing off a fixed amount every year
(d) a fixed rate of depreciation is charged on the book value of the asset over its useful life.

- (viii) Which of this is not a central problem of Economics?
(a) What to produce (b) How to produce
(c) Why to produce (d) For whom to produce.
- (ix) The break-even point is obtained at the intersection of
(a) total revenue and total cost line (b) total cost and variable cost line
(c) variable cost and fixed cost line (d) fixed cost and total cost line.
- (x) In which market the firm becomes the price taker?
(a) Monopoly (b) Perfect competition
(c) Monopsony (d) Oligopsony.

Group - B

2. (a) Define price elasticity of demand. *[[CO4](Remember/LOCQ)]*
(b) Briefly explain 2 instances where price and demand move in same direction. *[[CO4](Understand/LOCQ)]*
(c) Compare between perfect competition and monopoly market structure. *[[CO5](Analyze/IOCQ)]*
2 + 4 + 6 = 12
3. (a) What is suggested by the law of diminishing marginal utility? *[[CO5](Remember/LOCQ)]*
(b) The expenditure method of national income accounting. *[[CO5](Understand/LOCQ)]*
(c) Is there any difference between demand pull and cost push inflation? Explain with appropriate diagrams. *[[CO4](Analyze/IOCQ)]*
2 + 4 + 6 = 12

Group - C

4. (a) What is Balance of Trade (BOT)? *[[CO5](Remember/LOCQ)]*
(b) How does a company collect capital? Explain the sources. *[[CO2](Analyze/LOCQ)]*
(c) How does the central bank control inflationary and deflationary situation by open market operations? *[[CO5](Analyze/IOCQ)]*
2 + 4 + 6 = 12
5. (a) Distinguish between partnership and company form of organisation. *[[CO1](Analyze/IOCQ)]*
(b) What are the benefits of international trade? *[[CO4](Understand/LOCQ)]*
(c) Write a short note on IMF. *[[CO4](Understand/LOCQ)]*
4 + 4 + 4 = 12

Group - D

6. (a) Journalise the following transactions 2022.
10th May: Commenced business with a capital of 1,00,000
13th May: Purchased goods for cash 15,000
19th May: Sold goods for cash 20,000
25th May: Goods taken by the proprietor for personal use of 1,000.
[[CO6](Understand/HOCQ)]

(b) Consider the following data:

Liabilities	Rs.	Assets	Rs.
Equity share capital	40,000	Plant and Machineries	24,000
Capital reserve	8,000	Land and Building	40,000
8% loan on mortgage	32,000	Furniture and Fitting	16,000
Creditors	16,000	Stock	12,000
Bank overdraft	4,000	Debtors	12,000
Current taxation	4,000	Investments(short-term)	4,000
Future taxation	4,000	Cash	12,000
Profit and loss A/c	12,000		
	1,20,000		1,20,000

Calculate

- (i) Current ratio
- (ii) Quick ratio
- (iii) Debt Equity ratio
- (iv) Debtor's turnover ratio.

[[CO2,CO6](Evaluate/HOCQ)]

4 + 8 = 12

7. (a) A manufacturing firm produced 4000 units of steel using 11,000 units of iron ore. The raw materials (iron ore) cost the company Rs. 18,700 when purchased. According to the standard cost card, each unit of steel requires 2.5 units of iron ore at a cost of Rs. 1.80 per unit. Compute the material quality variance and material price variance.

[[CO4](Evaluate/HOCQ)]

(b) Consider the following data:

- Fixed cost = Rs. 90,000
- Selling price per unit = Rs. 12
- Variable cost per unit:
- Direct Material = Rs. 5
- Direct labour = Rs. 2
- Direct overheads = 100% of direct labour

Calculate

- i. P/V ratio
- ii. Break even (quantity)
- iii. Break even (sales).

[[CO2](Understand/HOCQ)]

(c) The expenses budgeted for productions of 1000 units in a factory are given below:

Particulars	Rs.
Material cost	7,00,000
Labour cost	2,50,000
Variable overheads	2,00,000
Selling expenses(20% fixed)	1,30,000
Administrative expenses	2,00,000
Total cost	14,80,000

Prepare a flexible budget for production of 600 units and 800 units assuming administrative expenses are rigid for all level of production.

[[CO2](Analyze/HOCQ)]

3 + 3 + 6 = 12

Group - E

8. (a) Following information are available in respect of a project (figs. in Rs.lakhs)

YEAR	Cash Flows	Discounting factors
0	(100)	1.000
1	20	0.909
2	25	0.826
3	30	0.752
4	40	0.683
5	60	0.621

Based on Net Present Values of the project, comment on whether it is acceptable. [[CO3](Evaluate/HOCQ)]

(b) A company has purchased a machine for ₹13,00,000. Expected life of the asset is 10 yrs. Salvage value from the asset is 300000. Based on reducing balance method, prepare statements showing the annual depreciation amounts and written down values for 3 years. [[CO6](Analyse/IOCQ)]

6 + 6 = 12

9. (a) From the following information find the Weighted Average Cost of Capital. Cost of debt capital 8%, preference share capital 10%, equity capital 12% and retained earnings 5%.

The capital structure of the firm is as follows

Sources	Amount (Rs)
Debt	5,00,000
Preference share	2,00,000
Equity share	6,00,000
Retained earnings	1,00,000

[[CO6](Evaluate/HOCQ)]

(b) Differentiate between equity and debt. [[CO6](Analyse/IOCQ)]

[[CO6](Analyse/IOCQ)]

6 + 6 = 12

Cognition Level	LOCQ	IOCQ	HOCQ
Percentage distribution	27.08	35.42	37.5

Course Outcome (CO):

After the completion of the course students will be able to

1. Evaluate a project and estimate the total cost of a project
2. Apply financial analytical methodologies to prepare a report regarding the financial performance of an organization
3. Participate actively in organization's capital budgeting process
4. Provide vital inputs regarding the pricing of a product
5. Apply the knowledge of the interplay of various economic variables and indicators in the workplace
6. Provide insights about different accounting concepts and apply broader concepts like costs, revenues, assets, liabilities, capital, profit, investments and interest.

*LOCQ: Lower Order Cognitive Question; IOCQ: Intermediate Order Cognitive Question; HOCQ: Higher Order Cognitive Question.