ECONOMICS FOR ENGINEERS
(HMTS 3201)

Time Allotted : 2½ hrs   **Full Marks : 60**

Figures out of the right margin indicate full marks.

*Candidates are required to answer Group A and
<u>any 4 (four)</u> from Group B to E, taking <u>one</u> from each group.*

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

Group – A

1. Answer any twelve: **12 × 1 = 12**

Choose the correct alternative for the following

(i) The demand curve of a Giffen good
(a) Slopes downward   (b) Slopes upward
(c) Is vertical   (d) Is horizontal

(ii) The airline industry in India is an example of _____ market
(a) Monopoly   (b) Oligopoly   (c) Monopolistic   (d) Duopoly

(iii) The elasticity of demand is greater than one when
(a) The percentage change in price is greater than the percentage change in quantity demanded
(b) The percentage change in quantity demanded is greater than the percentage change in price
(c) The demand curve is vertical
(d) Demand is perfectly inelastic.

(iv) The term "balance of trade" refers to:
(a) The difference between a country's exports and imports of goods
(b) The difference between all transactions in the balance of payments
(c) The difference between exports and imports of services
(d) The total financial transactions of a country in a year

(v) Which of the following is NOT a function of commercial banks?
(a) Issuing currency   (b) Granting loans
(c) Accepting deposits   (d) Facilitating payments

(vi) The purpose of variance analysis is to
(a) Measure the performance of employees   (b) Increase the price of goods sold
(c) Compare actual costs with standard costs   (d) Eliminate fixed costs

(vii) Which of the following is NOT a classification of cost?
(a) Fixed cost   (b) Variable cost   (c) Semi-variable cost   (d) Sunk cost

(viii) Which financial ratio measures a company's ability to meet short-term obligations?
(a) Debt-to-Equity Ratio (b) Current Ratio
(c) Return on Equity (ROE) (d) Inventory Turnover Ratio

(ix) Which method does consider Time Value of Money for financial evaluation of a project?
(a) Average Rate of Return (b) Payback period
(c) Discounted cash flow (d) Both (a) and (c)

(x) Which of the following is a key characteristic of perpetuity?
(a) It has fixed periodic payments for a limited period
(b) It involves a series of payments that continue indefinitely
(c) The value of a perpetuity decreases over time due to inflation
(d) The payments in a perpetuity must increase at a constant rate.

Fill in the blanks with the correct word

(xi) Changes in the total level of utility for the consumption of one additional unit of a commodity is known as _____.

(xii) The profits in a partnership are usually shared according to the terms of the _____.

(xiii) In a make-or-buy decision, the decision is based on both cost and _____ factors, such as quality and availability.

(xiv) Willingness to buy a product backed by purchasing power is known as _____.

(xv) _____ includes all transactions related to visible, invisible & capital transfers.

Group - B

2. (a) What is the difference between Gross Domestic Product and Gross National Product? *[(CO5)(Remember/LOCQ)]*
   (b) How do you calculate national income using the Expenditure Method? *[(CO5)(Remember/LOCQ)]*
   (c) What is Net National Income (NNI), and how is it calculated? *[(CO5)(Remember/LOCQ)]*
   4 + 4 + 4 = 12

3. (a) Define Demand. *[(CO3)(Remember/LOCQ)]*
   (b) Discuss some exceptions to the law of Demand. *[(CO!&4)(Remember/LOCQ)]*
   (c) A demand function is given as: $= 100 - 10p + 0.5m$, where, p = price of the commodity and m = income of the consumer. Find out the value of income elasticity of Demand. (Given, $p = 7$ units and $m = 50$ units) *[(CO1&2)(Apply/IOCQ)]*
   2 + 5 + 5 = 12

Group - C

4. (a) Enlist five information that should be included in the partnership deed. *[(CO5)(Remember/LOCQ)]*
   (b) What is LLP? Differentiate between public and private company. *[(CO5)(Apply/IOCQ)]*
   (c) What is MNC? Give on example. *[(CO5)(Remember/LOCQ)]*
   5 + 5 + 2 = 12

5. (a) What is the difference between commercial and central banks? *[(CO5)(Remember/LOCQ)]*

(b)   Explain the functions of the central bank.   *[(CO5)(Remember/LOCQ)]*

(c)   How does the central bank control inflation?   *[(CO5)(Apply/IOCQ)]*

4 + 4 + 4 = 12

Group - D

6. (a)   Prepare a Cash Budget for 3 months from January to March2023 from the following data given below:

Particulars	Months				
	Nov	**Dec**	**Jan**	**Feb**	**Mar**
Sales (Rs.)	2,00,000	1,50,000	2,30,000	1,00,000	2,00, 000
Purchases (Rs.)	50,000	80,000	90, 000	60,000	60,000
Wages (Rs.)	10,000	12,000	10,000	10,000	15,000
Expenses (Rs.)	4,000	2,000	3,000	4,000	3,000

Additional Information:

(i)   Opening balance as on 1.3.2023 is Rs. 60,000.

(ii) Period of credit allowed by the supplier is 2 months.

(iii) 20% of sales are for cash & the period of credit allowed to customers for credit sales is 1 month.

(iv) Wages & expenses are paid in the following month.

(v) Income tax of Rs. 30,000 paid in the month of March 2023.   *[(CO4)(Apply/IOCQ)]*

(b)   Record the following transactions in Journal

2024 `

January 1 Kiran started business with cash 15,00,000

January 2 Goods purchased for cash 30,000

January 4 Machinery Purchased from Shyam 60,000

January 5 Rent paid in cash 18,000

January 7 Goods purchased on credit from Anil 25,000

January 9 Goods sold for cash 40,000   *[(CO6)(Apply/IOCQ)]*

6 + 6 = 12

7. (a)   With the following data for 50% capacity, prepare flexible budget for production at 80% and 100 % activity.

Production at 50% activity is 5000 units.

Material cost Rs.80/unit

Labour cost Rs.100/unit

Selling & distribution expense Rs.50,000 (40% fixed)

Administrative expense Rs.20,000 (50% fixed)

Fixed Expenses:

Insurance Rs.7,000

Rent Rs. 80,000   *[(CO4)(Apply/IOCQ)]*

(b)   From the following balances extracted from the book of ABC Ltd prepare a Trial Balance as on 31st March,2024.

Capital Rs. 4,50,000;Cash in hand Rs.1250; Building Rs.4,00,000; Sales Rs,290,000; Stock (on 1.4.2023) Rs.53,000; Balances at bank Rs.4,750; Sundry debtors Rs.59,000 Sundry creditors Rs.26,000; Commission paid Rs.750; Rent & taxes Rs.6,300; Purchases Rs.1,65,000; Salaries Rs.70,300; Telephone charges

Rs.3,400; Discount allowed Rs.650; Discount received Rs.1,000; Bills receivableRs.8,600; Bills payable Rs.6,000 *[(CO6)(Apply/IOCQ)]*

6 + 6 = 12

Group - E

8. (a) The respective book values and cost of specific capitals are given below. Determine the WACC *[(CO2,CO3)(Analyse/HOCQ)]*

Source	Book Value	Cost of Capital %
Debt	Rs:10000	2.75
Preference share	Rs.20000	7.78
Equity share	Rs.40000	8.9
Retained Earnings	Rs.10000	8.35

(b) Initial capital investments for two Projects A and B, both having a life of 5 years, are Rs.20,00,000 each. Net expected earnings for the projects are as given in the table. All other factors governing the project implementation and execution are identical. Which project should be chosen (Consider discount rate of 10%)? *[(CO1)(Apply/IOCQ)]*

Year	Expected Earnings (Rs.)	
	Project A	Project B
1	6,00,000	8,00,000
2	6,00,000	8,00,000
3	4,00,000	4,00,000
4	6,00,000	6,00,000
5	6,00,000	2,00,000

6 + 6 = 12

9. (a) A project costing Rs. 5, 60,000 is expected to produce annual net cash benefits of Rs. 80, 000 over a period of 15 years. Calculate the Internal Rate of Return (IRR) of the project. (Given, PV of annuity for 15 years are 7.191 and 6.811 at 11% and 12% rate) *[(CO4,6)(Analyse/HOCQ)]*

(b) Following information related to a project having initial investment of Rs. 2,00,000.

Year	1	2	3	4	5
NCF (In Rs.)	50,000	40,000	65,000	75,000	50,000

Calculate the IRR of the project and comment on its acceptance if the WACC is 11%. For the purpose following PVF are provided.

Year	1	2	3	4	5
PVF at 8%	0.926	0.857	0.794	0.735	0.681
PVF at 10%	0.909	0.826	0.751	0.683	0.621
PVF at 12%	0.893	0.797	0.712	0.636	0.567
PVF at 15%	0.870	0.756	0.658	0.572	0.497

[(CO5&6)(Apply/IOCQ)]

5 + 7 = 12

Cognition Level	LOCQ	IOCQ	HOCQ
Percentage distribution	50	45	5