

C 22536

(Pages : 3)



**SIXTH SEMESTER B.TECH. (ENGINEERING) DEGREE [2014 SCHEME]
EXAMINATION, APRIL 2017**

Applied Electronics and Instrumentation Engineering

AI 14 601—ENGINEERING ECONOMICS AND PRINCIPLES OF MANAGEMENT

(Common with BM 14.601, EE 14 601 and IC 14 604)

Time : Three Hours

Maximum : 100 Marks

Section 1 and Section 2 are to be answered in Separate Answer Books.

Section 1 (Engineering Economics) [Maximum : 50 marks]

PART A

Answer any four questions.

Each question carries 5 marks.

Use of interest tables is allowed.

1. What is 'Engineering Economics'? What are its goals ?
2. With the aid of examples, describe the meaning of 'sunk cost' and 'opportunity cost'.
3. Describe GDP and GNP concepts.
4. An owner of a micro-size electrical motor manufacturing company wishes to have Rs. 10,00,00,000 for expanding the company into a small size company after 10 years from now. What is the single payment that this owner should deposit now so that this owner gets the desired amount in 10 years ? The bank gives 10 % interest rate compounded annually.
5. What is meant by effective interest rate ? Supplement your answer with an example.

(4 × 5 = 20 marks)

PART B

Answer all questions.

6. (a) (i) State and describe the law of demand. (5 marks)
 - (ii) Describe the determinants of demand. (10 marks)
- Or*
- (b) (i) Describe the meaning of 'inflation' and 'deflation'. (5 marks)
 - (ii) What are the efforts made in a country to decrease inflation and deflation rates ? (10 marks)

Turn over

7. (a) A firm has identified two mutually exclusive investment proposals whose details are given below. The life of all the two alternatives is estimated to be five years with negligible salvage value. The minimum internal rate of return for the firm is 12 %.

	<i>Investment proposals</i>	
	A1	A2
	Rs.	Rs.
Investment	1,50,000	2,10,1000
Annual net income	45,570	58,260

Find the best alternative based on the internal rate of return method of comparison.

Or

(15 marks)

- (b) In an industrial area, the trucks take a roundabout route to reach several factories because of the presence of a huge pipeline carrying oil. This results in excessive travel time and increased fuel cost. So, the government is planning to construct a bridge over this huge pipeline. The estimated initial investment for constructing the bridge is Rs. 40,00,00,000. The estimated life of the bridge is 15 years. The annual operation and maintenance cost is Rs. 1,50,00,000. The value of fuel savings due to the construction of the bridge is Rs. 6,00,00,000 in the first year and it increases by Rs. 50,00,000 every year thereafter till the end of the life of the bridge. Check whether the project is justified based on Benefit-Cost ratio by assuming an interest rate of 12 % compounded annually.

(15 marks)

[2 × 15 = 30 marks]

Section 2 (Principles of Management) [Maximum : 50 marks]

PART A

Answer any **four** questions.

Each question carries 5 marks.

- Describe the characteristics of strategic and tactical decisions.
- Describe the steps, advantages and disadvantages of carrying out job evaluation by applying ranking method.
- What is meant by incentive? What are the different types of incentives made available in industrial organizations?
- The fixed cost of producing a product is Rs. 80,00,000. The estimated sales of this product is Rs. 2,00,00,000. The variable cost per unit of this product is Rs. 400. Each unit of this product sells at Rs. 2,000. From this data, (i) Determine the break-even point; and (ii) Determine the profit earned at a turnover of Rs. 1,60,00,000.
- Enumerate the functions and objectives of advertising.

(4 × 5 = 20 marks)

PART B

Answer all questions.

6. (a) With the aid of block diagrams, describe the characteristics, advantages and disadvantages of any three types of organizational structures.

(15 marks)

Or

- (b) Describe the functions of management.

(15 marks)

7. (a) Describe the three principle elements of cost of an industrial enterprise.

(15 marks)

Or

- (b) Record the following transactions in a journal and then post the entries in the ledger of cash accounts, goods account and capital account.

Transactions

March 1, 2017	Opened a hardware shop with	Rs. 25,000
March 3, 2017	Brought grinding wheels worth	Rs. 15,000
March 5, 2017	Sold grinding wheels to 'A'	Rs. 10,000
March 6, 2017	Commission paid	Rs. 500
March 9, 2017	Paid to bank	Rs. 2,000
March 12, 2017	Shop rent paid	Rs. 6,000
March 14, 2017	Purchased conduit pipes	Rs. 10,000
March 16, 2017	Conduit pipes sold	Rs. 5,000
March 17, 2017	Bought welding electrodes	Rs. 4,000

Also, prepare the trial balance and check the correctness of posting the entries.

(15 marks)

[2 × 15 = 30 marks]