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Paper Code : HSMC 301/HSMC-301/HSMC301 Economics for Engineers (Humanities-II)

UPID : 003446

Time Allotted : 3 Hours

Full Marks : 70

The Figures in the margin indicate full marks.

Candidate are required to give their answers in their own words as far as practicable

Group-A (Very Short Answer Type Question)

1. Answer *any ten* of the following :

[1 x 10 = 10]

- (I) The combination of stagnation and inflation is known as _____.
- (II) In the situation of bankruptcy, a stock which is recorded above common stock and below debt account is _____.
- (III) What is WPI?
- (IV) Sensitivity of demand to change in price is known as _____.
- (V) Decision tree algorithm belongs to the _____ family.
- (VI) A firm buys products but does not pay to suppliers instantly. This is recorded as _____.
- (VII) What is the usage of Power-sizing Model?
- (VIII) The owner of the debenture is qualified for Fixed-rate interest. (True / False)
- (IX) A portfolio having two risky securities can be turned risk less if _____.
- (X) On balance sheet, accruals, notes payable, and account payable are listed under current liabilities (True / False)
- (XI) A company that issues stocks and bonds to raise funds results in _____.
- (XII) What Is the Benefit-Cost Ratio (BRC)?

Group-B (Short Answer Type Question)

Answer *any three* of the following :

[5 x 3 = 15]

2. What is Income Statement? [5]
3. What is a patent? [5]
4. What are Recurring cost and Non-recurring cost? [5]
5. How can GST give relief to the overall tax burden? [5]
6. Is there any Importance of Ethics in Engineering and Engineering Economy? [5]

Group-C (Long Answer Type Question)

Answer *any three* of the following :

[15 x 3 = 45]

7. (a) Explain the types of property in the context of Depreciation. [5]
 (b) 'Almost all tangible property can be depreciated'. _____ Explain. [4]
 (c) 'One important exception is land, which is never depreciated.' _____ Explain. [6]
8. (a) Suppose a professional golfer wants to invest some recent golf winnings in her hometown bank for one year. Currently, the bank is paying a rate of 5.5% compounded annually. Assume inflation is expected to be 2% per year. [6]
 Identify i , f and i' . Repeat for inflation of 8% per year.
 (b) What is CPI or retail inflation? [9]
9. (a) A firm expanded one of its manufacturing operations inside an existing building. New processing and packaging equipment was purchased for \$800,000. Sales revenue for the year was \$1.25 million. Operating expenses for that year, not including the capital expenditures, were \$360,000. The new equipment qualifies for 100% bonus depreciation. [8]
 (i) What is the first-year depreciation charge?
 (ii) What is the first-year taxable income?
 (iii) What are the federal income taxes for the year?
 (b) Illustrate the model of a Balance sheet. [7]
10. (a) What are the steps involved in the rational decision making process? [8]
 (b) What do you know about the unusual aspects of engineering decision making? [7]

11. (a) How is CPI used to measure inflation? [5]
(b) Does an increase in CPI mean inflation? [2]
(c) What are the probability distributions for the annual benefit and life for the following project? [8]
The annual benefit's most likely value is \$8000 with a probability of 60%. There is a 30% probability that it will be \$5000 and the highest likely value is \$10,000. A life of 6 years is twice as likely as a life of 9 years.

*** END OF PAPER ***