



SF-7631

B. E. - IV (Sem - VIII) (Chem.) Examination
May/June - 2011
Chemical Engg. Plant Design & Economics

Time : Hours]

[Total Marks : 100

Instructions :

(1)

नीचे दर्शायेव निशानीवाणी विगतो उत्तरवही पर अवश्य लपवी. Fillup strictly the details of signs on your answer book.	Seat No. :
Name of the Examination :	<input type="text"/>
<input type="checkbox"/> B. E. - IV (Sem - VIII) (Chem.)	<input type="text"/>
Name of the Subject :	<input type="text"/>
<input type="checkbox"/> Chemical Engg. Plant Design & Economics	<input type="text"/>
Subject Code No. : <input type="text" value="7"/> <input type="text" value="6"/> <input type="text" value="3"/> <input type="text" value="1"/>	<input type="text"/>
Section No. (1, 2,.....) : <input type="text" value="Nil"/>	
Student's Signature	

- (2) Figure to the right indicate full marks.
- (3) Assume suitable data wherever required.
- (4) Draw neat diagrams.
- (5) Use of calculator is allowed.

- 1 (a) Answer the following : **2×5 = 10**
- (1) What do the following acronyms stand for ?
 - (a) Bleve
 - (b) Msds
 - (c) Osha
 - (d) Twa
 - (2) What do the following guide words stand for ?
 - (a) No or not
 - (b) As well as
 - (c) Part of
 - (d) Other than
 - (3) What is optimum economic design ?
 - (4) List two international journals of chemical engineering.
 - (5) What is firm process design ?
- (b) Write short note on design information from literature. 8

- 2 Answer the following : 6
- (a) Write short note on noxious gas removal. 6
- OR**
- (a) Biological treatment. 6
- (b) List items to be considered in making feasibility survey (any ten) 10
- 3 Answer the following : (any four) 4×4 = 16
- (a) Explain the following with respect to plant location :
 (1) Flood and fire protection
 (2) Community factors
- (b) Explain the following with regard to solid waste disposal.
 (1) Hydrolysis
 (2) Landfill
- (c) Discuss factors to be considered in selecting materials handling equipment.
- (d) Explain the following with respect to comparison of different processes.
 (1) Time factor
 (2) Process considerations.
- (e) Explain materials maintenance and selection as part of general safety checklist for identifying process hazards.
- 4 (a) Answer the following : 10
- (1) Explain gross profit with and without depreciation.
 (2) What is turnover ratio ?
 (3) What is the sixtenths factor rule for equipment cost comparisons ?
 (4) Explain book value.
 (5) Explain simple interest with example.
- (b) Explain cash flow for industrial operations with tree diagram. 8
- 5 Attempt any two : 16
- (a) Explain various factors counting for estimation of direct production cost.
- (b) List the various methods used for determining depreciation. Explain straight line method in brief.
- (c) Most commonly used methods for profitability evaluation while making investment.

6 Attempt any two :

16

- (a) Write short notes on :
Break even point and break even chart
- (b) The original value of the cyclone separator is Rs. 32,000 and its salvage value is Rs. 2,000. The service life is estimated to be 7 years. Determine the asset value at the end of 5 years using.
- (1) Straight line method
 - (2) Text book declining method
 - (3) Sum of the years digit method
 - (4) Double declining balance method
- (c) The purchased cost of a tubular exchanger, carbon steel shell and SS tubes having heat transfer area 500m^2 was Rs. 4,50,000 in January 1988. What is the cost for the same in January 1999 ?
- Value of index January 1988 = 87
Value of index January 1998 = 132
- Consider 7% inflation.
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