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SF-6465

B. E. - II (Sem. IV) (Computer) Examination

May / June – 2011

Engineering Management

Time : Hours] [Total Marks : **100**

Instructions :

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ **B. E. - 2 (Sem. 4) (Computer)**

Name of the Subject :

☛ **Engineering Management**

☛ Subject Code No. : **6 4 6 5** ☛ Section No. (1, 2,.....) : **Nil**

Seat No. :

Student's Signature

(2) Answers to the **two** sections must be written in two **separate** answer books.

(3) Abbreviations have got their usual meaning.

(4) Marks are shown at right hand side.

(5) All questions are **compulsory**.

SECTION - I

1 Write short notes : (any **two**) **20**

(1) Advantages and limitations of Linear programming problem.

(2) Queuing theory problem and components of queue.

(3) Decision theory approach.

2 Answer any **three** : **30**

(1) Maximise $Z = 800x_1 + 600x_2 + 300x_3$

subject to the constraints

$10x_1 + 4x_2 + 5x_3 \leq 2000$

$2x_1 + 5x_2 + 4x_3 \leq 1009$

and $x_1, x_2, x_3 \geq 0$

Solve by Simplex method.

(2) The captain of cricket team has to allot five middle batting positions to five batsman. The average runs scored by each batsman at these positions are as follows :

Batsman	Batting positions				
	I	II	III	IV	V
P	40	40	35	25	50
Q	42	30	16	25	27
R	50	48	40	60	50
S	20	19	20	18	25
T	58	60	59	55	53

Find the assignment of batsmen to positions which would give the maximum number of runs.

(3) Obtain an initial basic feasible solution for the following transportation problem, whose cost matrix is given below. Whether it is optimal ? If not then find optimal solution and total optimum transportation cost. (Use Vogel's approximation method)

Origin	Destination				Supply
	D_1	D_2	D_3	D_4	
O_1	6	1	9	3	70
O_2	11	5	2	8	55
O_3	10	12	4	7	70
Demand	85	35	50	45	

(4) Explain Hungarian method for solving an assignment problem.

(5) A firm produces two types of tablets for headache. Each tablet of type A contain 2 grain Aspirin, 5 grain Bicarbotnate and 1 grain Codin. While each tablet of type B contain 1 Grain Aspirin, 8 Grain Bicarbonate and 6 Grain Codin. It is necessary to take minimum 12 grain Aspirin, 74 grain Bicarbonate and 24 grain Codin to get immediate relief from headache. Find out by graphical method, how many tablets of both the types should be taken minimum to get quick relief from headache.

SECTION - II

3 Attempt any **two** : **16**

(a) Explain the meaning of organisation. Also discuss various forms of organisation and compare how they are different.

(b) Classify forms of co-operative undertaking according to the nature of servise.

(c) Explain the meaning of coordination. Why it is treated as an essence ? Discuss importance of co-ordination in management.

4 Attempt any **two** : **16**

(a) Explain the meaning of Trade unions. Also discuss reasons for the formation of Trade unions and also explain advantages of trade unions to workers and to the society.

(b) List out principles laid by Fedric Taylor and explain with suitable examples.

(c) Explain the term "Collective bargaining" and discuss the process with suitable examples.

5 Write notes on any **three** : **18**

(a) Principles laid by Henry Fayol

(b) Causes of Industrial dispute

(c) Advantages of Public sector

(d) Partnership firm.
