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SB-4134

M. B. A. (Sem. II) (THM) Examination

March / April – 2011

Tourism Development & Operations Management

Time : **3** 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 :

☛ **M. B. A. (Sem. 2) (THM)**

Name of the Subject :

☛ **Tourism Development & Operations Management**

☛ Subject Code No. : **4 1 3 4** ☛ Section No. (1, 2,.....) : **Nil**

Seat No. :

Student's Signature

(2) Q.**2** and Q.**6** are **compulsory**. Attempt any **four** full questions out of Q.**1**, Q.**3**, Q.**4**, Q.**5**, Q.**7** and Q.**8**.

(3) Figures to the **right** indicate full marks.

1 (a) What do you mean by Operations research ? Explain different models available in operations research. **8**

(b) What do you mean by demand forecasting ? Explain types of forecasts with respect to time horizon. **8**

2 Solve by using simplex method **18**

$Z_{Max} = 50\ X_1 + 70\ X_2$

Sub to constraints

$X_1 + X_2 \leq 70$

$X_1 + 2\ X_2 \leq 100$

$2\ X_1 + X_2 \leq 120$

$X_1, X_2 \geq 0.$

3 Production of a certain chemical mixture should contain 80 mg chlorides, 28 mg nitrates and 36 mg of sulphate. The company can use two substances and a base. Substance X contains 8 mg chlorides, 4 mg nitrates and 6 mg sulphates. Substance Y contains 10 mg chloride, 2 mg nitrates and 2 mg sulphates. Both substance costs Rs. 20. It is required to produce the mixture using substance X and Y so that the cost is minimized. Formulate the problem by using Linear programming problem and solve it by using graphical method. **16**

4 A solicitor's firms employs typists on hourly piece rate basis for their daily work. There are five typist and their charges and speed are different. According to an earlier understanding only one job is given to one typist and the typist is paid for a full hour even if he works fraction of an hour. Find the least cost allocation for the following data. **16**

Typist	*Rate per hour (Rs.)*	*No. of pages typed / Hour*	*Job*	*No. of pages*
A	5	12	*P*	199
B	6	14	*Q*	175
C	3	8	*R*	145
D	4	10	*S*	298
E	4	11	*T*	178

5 (a) Write characteristics and assumptions made in Assignment Problem. **4**

(b) Five men are available to perform five different jobs. From past records the time that each man takes to perform a job is known and is given in the following matrix. **12**

	Jobs				
Men	***I***	***II***	***III***	***IV***	***V***
A	2	9	2	7	1
B	6	8	7	6	1
C	4	6	5	3	1
D	4	2	7	3	1
E	5	3	9	5	1

6 (a) Define the following terms with respect to project management. **4**

(i) Event
(ii) Earliest starting time
(iii) Critical path
(iv) Latest finish time

(b) State Characteristics and Assumptions made in Transportation problem. **4**

(c) ABC typesetting solutions is a major type setter of printing material based at Surat. It has recently received six orders for type setting printing material. Table shows the six jobs in the order of their arrival, their processing time and due dates of delivery to the customers. Sequence the given jobs according to the priority rules of (1) FCFS (2) LCFS (3) Due Date (4) SPT (5) Random. **10**

Jobs (in order of Arrival)	Processing time	Due date
A	3	9
B	7	10
C	4	7
D	2	4
E	5	8
F	8	12

7 Determine the best sequencing of 6 jobs on 4 machines. The processing time is given below. Passing of jobs is not allowed. Determine idle time on each machine and total elapsed time : **16**

	Machine			
Jobs	***M1***	***M2***	***M3***	***M4***
A	6	5	3	4
B	7	2	5	5
C	9	6	3	3
D	8	5	5	4
E	8	3	4	3
F	9	5	5	4

8 Obtain the initial basic feasible solution by using North-West Corner method, Least cost method and Vogel's Approximation Method. The entries in the cell indicates the unit transportation cost. **16**

Plant ↓ *Warehouse* →	*W*1	*W*2	*W*3	*W*4	*Supply*
*P*1	48	60	56	58	150
*P*2	45	55	53	60	250
*P*3	50	65	60	62	350
*P*4	52	64	55	61	250
Demand	200	250	250	200	