(20519) Roll No. .....

Total Questions : **13**] [Printed Pages : **4**

18060

B.B.A. IVth Semester Examination, May-2019

OPERATION RESEARCH

(BBA-406)

Time : 3 Hrs.] *[M.M. : 75*

Note :– Attempt questions from all Sections as per instructions. Calculator may be used.

Section–A

(Very Short Answer Type Questions)

Note :– Attempt all the *five* questions. Each question carries 3 marks. Very short answer is required not exceeding **75** words.

1. What do you mean by Operation Research ?
2. Define PERT.

3. Give three advantages of linear programming.
4. What is CPM ?
5. What is EMV ?

Section–B

(Short Answer Type Questions)

Note :– Attempt any *two* questions out of the following three questions. Each question carries 7½ marks. Short answer is required not exceeding **200** words.

6. Discuss the importance of operation research in management.
7. Explain the role of linear programming in managerial decision-making.
8. Find the maximum value of $z = 60x_1 + 30x_2$ x_1, $x_2 \geq 0$.

   Subject to the following constraints :

$$6x_1 + 3x_2 \leq 90$$

$$3x_1 + 6x_2 \leq 72$$

Section–C

(Long Answer Type Questions)

Note :– Attempt any *three* questions out of the following five questions. Each question carries 15 marks. Answer is required in detail.

9. Obtain the initial feasible solution of a transportation problem by North-West corner method whose cost and rim requirement table is given below :

Plant	Warehouse			Supply
	W_1	W_2	W_3	
P_1	7	6	9	20
P_2	5	7	3	28
P_3	4	5	8	17
Demand	21	25	19	65

10. Explain Simplex method of solving linear programming problem.

11. The following table gives the pay-offs of three Acts–A_1, A_2 and A_3 and three states of nature–θ_1, θ_2, θ_3 and the prior probabilities associated with the states of nature. Calculate the expected monetary values and decide as to which course of action is the best one :

States of nature	Probabilities	Alternative Acts–A		
		A_1	A_2	A_3
θ_1	0.1	125	–20	–125
θ_2	0.7	500	540	500
θ_3	0.2	650	740	750

12. Explain the statistical decision theory. Discuss its scope, utility and limitations.

13. What is Assignment Problem ? It is true to say that it is a special case of the transportation problem ? Explain.