SEMESTER EXAMINATION-2021
CLASS - ... BBA- 5ᵀᴴ EMESTER ...
PAPER CODE: BBA- C 501
PAPER TITLE: QUANTITATIVE TECHNIQUES FOR MANAGEMENT

Time: 3 hour   **Max. Marks: 70**
                                                                         Min. Pass: 40%

Note: Question Paper is divided into two sections: **A and B.** Attempt both the sections as per given instructions.

SECTION-A (SHORT ANSWER TYPE QUESTIONS)

Instructions: Answer any five questions in about 150 words   (5 X 6 = 30 Marks)
each. Each question carries six marks.

Question-1: Define critical path methods? Write the steps for drawing critical path network diagram.

Question-2: Briefly discuss the theory of ABC analysis and also write its advantages?

Question-3: What is economic order quantity? How will you determine an inventory model with no shortage?

Question-4: Discuss the basic rule and conventions to draw decision tree.

Question-5: Determine the following terms- Total float, Independent float, free float, slack variable and surplus variable?

Question-6: Discuss Just in time concepts and its advantages in decision making.

Question-7: Write the algorithm of processing n-jobs through two machines?

Question-8: Describe the methods for finding initial solution?

Question-9: Find the total cost from the following table using least cost method.

Factory	Warehouse				
	W_1	W_2	W_3	W_4	Capacity
f_1	21	16	25	13	11
F_2	17	18	14	23	13
F_3	32	27	18	41	19
Demand	6	10	12	15	43

Question-10: What is inventory management? What are objectives and benefits of inventory management?

SECTION-B (LONG ANSWER TYPE QUESTIONS)

Instructions: Answer any FOUR questions in detail. Each   (4 X 10 = 40 Marks)
question carries 10 marks.

Question-11: Calculate the total time require to process all the jobs in a sequence which is total elapsed time and the time for which machines remains free.

JOB Machine	1	2	4	5	6
M_1	4	1	8	2	9
M_2	2	6	7	8	3

Question-12: A research and development department is developing a new power supply for a console television set. It has broken the job down in the following form.

Job	Description	Immediate	Time (Days)
a	Determine output voltages	-	5
b	Determine whether to us solid state rectifier	a	7
c	Choose rectifiers	b	2
d	Choose	b	3
e	Choose	c	1
f	Choose	d	2
g	Choose	c	1
h	Layout chassis	e, f	3
i	Build and test	g, h	10

Draw a critical-path scheduling arrow diagram and find the minimum time for completion of the projects.

Question-13: Solve the following transportation problem using vogel approximation methods and determine the total cost.

Destination Origin	D_1	D_2	D_3	D_4	D_5	D_6	SUPPLY
O_1	1	2	1	4	3	2	30
O_2	3	3	2	1	4	3	50
O_3	4	2	5	9	6	2	75
O_4	3	1	7	3	4	6	20
DEMAND	20	40	30	10	50	25	120

Question-14: Solve graphically the following linear programming problems:

Maximize $Z = 9x_1 + 3X_2$

Subject to constraints

$2X_1 + 3X_2 \leq 13$

$2X_1 + X_2 \leq 5$

$X_1, X_2 \geq 0$

Question-15: Define linear programming and state the various steps for solving linear programming problems.

Question-16: What is program evaluation technique? Discus the various steps involve in a problem using PERT and its application?

Question-17: What is simulation? Describe the reason for using simulation and write its advantages also.

Question-18: What is job sequencing? Describe algorithm of processing n-jobs through m-chine and its advantages.

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