

B.B.A. Semester - 6 (CBCS) Examination**March/April-2024 (OLD COURSE)****ADVANCED RESEARCH OPERATION TECHNIQUES(ELECTIVE)****Time: 2:30 Hours****Marks: 70****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate marks.

Que.1 (A) What is network analysis? When it is used? (07)
 (B) Explain total float, free float and independent float. (07)
 OR

Que.1 Find for given information. (14)

- (i) Draw an arrow diagram.
- (ii) Tabulate EST, EFT, LST and LFT for all the stages.
- (iii) Find the critical path and assembly duration.
- (iv) Find the probability of completing the project before 31 days.
- (v) What is the chance of project duration exceeding 46days.

job	Duration(days)		
I – j	a	m	b
1 – 2	3	6	15
2 – 3	6	12	30
3 – 5	5	11	17
7 – 8	4	19	28
5 – 8	1	4	7
6 – 7	3	9	27
4 – 5	3	6	15
1 – 6	2	5	14
2 – 4	2	5	8

Que.2 (A) A machine shop has a press which is to be replaced as it wears out. A new press is to be installed now and on an optimal replacement plan is to be for next 7 years after which the press is no longer required. Following data are available: (07)

Year	1	2	3	4	5	6	7
Cost of machine (₹)	5,000	5,250	5,500	6,000	6,500	7,250	8,000
Salvage value (₹)	2,500	1,250	750	500	400	250	0
Operating cost (₹)	1,500	2,000	2,500	3,000	3,750	4,500	5,750

Find optimal replacement policy.

(B) A manufacturer has a machine costs ₹.2500 but running cost of ₹.1200 per year for six years increase by ₹.200 per year then after. If money is worth 10% per year find optimal replacement year. (07)

OR

Que.2 (A) what is group replacement? Explain in detail. (07)
 (B) what are the three strategies of replacement of items which follow sudden failure mechanisms? (07)

Que.3 We have six jobs each of which must go through the three machines A,B,C in order ABC. Processing time in hours are as given below. (14)

Job	Processing time (in hours)		
	A	B	C
1	3	8	13
2	12	6	14
3	5	4	9
4	2	6	12
5	9	3	8
6	11	1	13

Find total elapse time for machine.

OR

- Que.3 (A) what is Sequencing problem? (07)
(B) Five jobs are performed, first on machine X and then on machine Y. The time taken, in hours by each job on each machine, is given below: determine the total elapsed time and optimal sequence. (07)

Job	A	B	C	D	E
Time on machine X	12	4	20	14	22
Time on machine Y	6	14	16	18	10

total number of enquiries?

- Que.4 Explain the following. (any two) (14)
(i) Explain EOQ
(ii) Explain Inventory quality control
(iii) Explain different types of inventories.

- Que.5 (A) Explain graphic method in terms of game. (07)
(B) Explain Dominance Rule for solution of game. (07)

OR

- Que.5 (A) Player A is paid ₹. 8.00 if two coins turn both heads and ₹. 10.00 if two coins turn both tails. Player B is paid ₹. 3.00 when the two coins do not match. Given the choice of being A or B which one would you choose and what would be your strategy? (07)
(B) Solve the game. (07)

	B		
A	8	4	-2
	-2	-1	3
