

SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)

(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai — 600 044.

B.Com. END SEMESTER EXAMINATIONS APRIL-2022

SEMESTER - II

20UCOAT2002 - Business Statistics and Operational Research - II

Total Duration : 3 Hrs.

Total Marks : 60

Section A

Answer any **SIX** questions ($6 \times 5 = 30$ Marks)

1. Define probability and explain its importance in decision making.
2. Test the significance of $r = 0.4$ obtained from 15 pairs of observation at 5% level of significance. [$t @ 5\% \text{ ndf } 13 = 2.12$]
3. Solve the following transportation problem.

	W1	W 2	W 3	Supply
P 1	7	6	9	20
P 2	5	7	3	28
P 3	4	5	8	17
Demand	21	25	19	65

4. Draw the network diagram from the following.

Activity	1-2	1-3	2-3	2-4	3-4	4-5
Days	20	25	10	12	6	10

5. From an ordinary pack of cards numbered 1 to 20 a card is drawn at random. What is the probability that the card drawn bears a number which is multiple of 4 or 7.
6. Define sampling and explain its merits.
7. Solve the assignment problem.

	M1	M2	M3	M4	M5
J1	7	5	9	8	11
J2	9	12	7	11	10
J3	8	5	4	6	9
J4	7	3	6	9	5
J5	4	6	7	5	11

Contd...

8. Draw a network diagram from the following data:

Name of the activity	Pre -requisite activity	Time estimated (in days)
A	None	2
B	A	3
C	A	4
D	B and C	6
E	None	2
F	E	8

Section B

Answer any **THREE** questions ($3 \times 10 = 30$ Marks)

9. The TNPSC wants to select 5 Directors. There are 50 applicants for these posts out of which 30 are men and 20 are women candidates. What is the probability that:

- All are men
- All are women
- 3 men and 2 women

10. Explain the different methods of sampling.

11. In a test given to two groups of students drawn from two normal populations, the marks obtained were as follows:

Group A	18	20	36	50	49	36	34	49	41
Group B	29	28	26	35	30	44	46		

Examine @ 5% level whether the two populations have the same variance. [F value @ 5% for ndf 8,6 = 4.147]

12. A project has the following characteristic:

Activity	Duration	Preceding Activity
A	6	—
B	8	A
C	4	A
D	9	B
E	2	C
F	7	D

Construct the network and compute LST, LFT, EST, EFT and determine the critical path.

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SEMESTER - II

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13. A company is faced with the problem of assigning six different machines to five different jobs. The costs are estimated & given below:

Jobs

Machines	J1	J2	J3	J4	J5
M1	6	2	5	2	6
M2	2	5	8	7	7
M3	7	8	6	9	8
M4	6	2	3	4	5
M5	9	3	8	9	7
M6	4	7	4	6	8
