



AD-3255

Third Year B. Sc. (Sem. VI) Examination

March/April – 2015

6001 : Operations Research

(New Course) (Elective Generic)

Time : 2 Hours]

[Total Marks : 50

Instructions :

(1)

नीचे दृशांवेक निशानीवाणी विगतो उत्तरवडी पर अवश्य लपवी.
Fillup strictly the details of signs on your answer book.

Name of the Examination :
THIRD YEAR B. SC. (SEM. VI)

Name of the Subject :
6001 : OPERATIONS RESEARCH (NEW)

Subject Code No. : 3 2 5 5 Section No. (1, 2,.....): Nil

Seat No. :

Student's Sign

- (2) All questions are compulsory.
(3) Digits to the right of each question indicate its marks.
(4) Follows usual symbols. [05]
(5) Use of scientific calculator is permissible.

1 Answer the following questions : (Any Two)

(1) Solve the following A.P.

Programmers
Programmes $\begin{bmatrix} 1 & 2 & 3 \\ 2 & 3 & 1 \\ 3 & 1 & 2 \end{bmatrix}$

(2) Solve the following game :

Player B
 $B_1 \ B_2$
Player A $A_1 \ A_2 \begin{bmatrix} -5 & 2 \\ -7 & -4 \end{bmatrix}$

(3) Solve the following T.P. by using NWCM :

		Destinations				Supply
		D1	D2	D3	D4	
Sources	S1	6	4	1	5	14
	S2	8	9	2	7	16
	S3	4	3	6	2	5
Demand		6	10	15	4	

2 (a) Solve the following A.P. optimally:

[08]

		Tasks				
		I	II	III	IV	V
Jobs	A	41	72	39	52	25
	B	22	29	49	65	81
	C	27	39	60	51	40
	D	45	50	48	52	37
	E	29	40	45	26	30

OR

(a) Solve the following A.P. optimally:

[08]

		Tasks			
		A	B	C	D
Subordinates	1	10	24	30	15
	2	16	22	28	12
	3	12	20	32	10
	4	9	26	34	16

(b) Solve the following A.P. optimally:

[07]

		Tasks			
		I	II	III	IV
Jobs	A	8	26	17	11
	B	13	28	4	26
	C	38	19	18	15
	D	19	26	24	10

OR

(b) Solve the following A.P. optimally:

[07]

		Tasks			
		A	B	C	D
Subordinates	1	18	24	28	32
	2	8	13	17	18
	3	10	15	19	22

3 (a) Find the initial b.f.s. of the following T.P. by using VAM:

[08]

		Destinations				
		D1	D2	D3	D4	Supply
Sources	S1	11	13	17	14	250
	S2	16	18	14	10	300
	S3	21	24	13	10	400
Demand		200	225	275	250	

OR

(a) Find the initial b.f.s. of the following T.P. by using LCM:

[08]

		Destinations				
		D1	D2	D3	D4	Supply
Sources	S1	21	16	15	3	11
	S2	17	18	14	23	13
	S3	32	27	18	41	19
Demand		6	10	12	15	

(b) Solve the following T.P. by using MODI method:

[07]

		Destinations			Supply
		D1	D2	D3	
Sources	S1	4	8	8	76
	S2	16	24	16	82
	S3	8	16	24	77
Demand		72	102	41	

OR

(b) Solve the following T.P. by using MODI method:

[07]

		Destinations				Supply
		D1	D2	D3	D4	
Sources	S1	19	30	50	10	7
	S2	70	30	40	60	9
	S3	40	8	70	20	18
Demand		5	8	7	14	

4 (a) Find the value of the following game:

[08]

		Player B			
		B1	B2	B3	B4
Player A	A1	1	7	3	4
	A2	5	6	4	5
	A3	7	2	0	3

OR

(a) Find the value of the following game:

[08]

		Player B			
		B1	B2	B3	B4
Player A	A1	3	-5	0	6
	A2	-4	-2	1	2
	A3	5	4	2	3

(b) Use graphical method to solve the following game and find the value of the game:

[07]

		Player B		
		B1	B2	B3
Player A	A1	1	3	11
	A2	8	5	2

OR

(b) Use graphical method to solve the following game and find the value of the game:

[07]

		Player B	
		B1	B2
Player A	A1	-6	7
	A2	4	-5
	A3	-1	-2
	A4	-2	5
	A5	7	-6