TBCS(3.1)

2019

Time : 3 hours

Full Marks : 80

Answer all questions

All questions carry equal marks

Candidates are required to answer in their own words as far as practicable

(OPERATIONS RESEARCH)

1. Use simplex algorithm to solve the following LPP :

Maximize $Z = 3x_1 + 2x_2$

Subject to ; $4x_1 + 3x_2 \leq 12$

$4x_1 + x_2 \leq 8$

$4x_1 - x_2 \leq 8$

$x_1 \geq 0, x_2 \geq 0.$

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Or

Find the dual of the following LPP :

Minimize $Z = 2x_2 + 5x_3$

Subject to ; $x_1 + x_2 \geq 2$

$2x_1 + x_2 + 6x_3 \leq 6$

$x_1 - x_2 + 3x_3 = 4$

$x_1 \geq 0, x_2 \geq 0, x_3 \geq 0.$

2. Find the optimum integer solution of the following LPP :

Maximize $Z = x_2 + x_2$

Subject to ; $3x_1 + 2x_2 \leq 5$

$x_2 \leq 2$

$x_1 \geq 0, x_2 \geq 0$, and are integer.

Or

Solve the transportation problem for minimization.

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Sources	Destinations			
	A	*B*	*C*	Capacity
I	2	2	3	10
II	4	1	2	15
III	1	3	1	40
Demand	20	15	30	65

3. Solve the following 2×3 game graphically :

Player B

$$\text{Player A} \begin{bmatrix} 1 & 3 & 11 \\ 8 & 5 & 2 \end{bmatrix}$$

Or

Explain the network technique highlighting its objectives,methodology and advantages.

4. Six jobs go through machine I and then go through machine II. The following gives the machine time in hours for six job on two machines. Find the

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sequence of job that minimizes the total elapsed time to complete the job

Job	1	2	3	4	5	6
Machine-I	5	9	4	7	8	6
Machine-II	7	4	8	3	9	5

Explain each step of algorithm used.

Or

A travelling Salesman has to visit 5 cities. He wishes to start from a particular city, visit each city once and then return to his starting paint. Cost of going from one city to another is shown below. Find the least cost route.

		To city				
		A	*B*	*C*	*D*	*E*
From city	*A*	∞	4	10	14	2
	B	12	∞	6	10	4
	C	16	14	∞	8	14
	D	24	8	12	∞	10
	E	2	6	4	16	∞

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TBCS(3.4)

2019

Time : 3 hours

Full Marks : 80

Answer **all** questions

All questions carry equal marks

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(COMPUTER GRAPHICS AND MULTIMEDIA)

1. (*a*) What is information handling software ?

   (*b*) Define graphics software and explain translation and rotation.

Or

   (*c*) Explain homogeneous co-ordinate system and Morphing.

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(*d*) Write about the application of computer graphics.

2. (*a*) What is multimedia ? What are the components of multimedia ?

(*b*) What is sampling ? Write the computer representation of sound and sampling.

Or

(*c*) What are audio tools ? Explain with suitable examples.

(*d*) What is tweening in multimedia ? Explain with examples.

3. (*a*) What is internet ? What are the hardware and software requirements for internet ?

(*b*) Write short notes on :

(*i*) FTP

(*ii*) HTTP

(*iii*) TCP/IP

(*iv*) WWW.

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Or

(*c*) What is the difference between Linking and loading ?

(*d*) Write short notes on :

(*i*) Web Browser

(*ii*) HTML

(*iii*) URL.

4. (*a*) What are the different Action and photoshop files in ADOBE PHOTOSHOP ?

(*b*) Differentiate between Painting and Retouching.

Or

(*c*) Write short notes on :

(*i*) Filters

(*ii*) Painting

(*iii*) Retouching

(*iv*) Action files.

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2019

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Full Marks : 80

Answer all questions

All questions carry equal marks

Candidates are required to answer in their own words as far as practicable

(SOFTWARE ENGINEERING)

1. (*a*) Explain classical waterfal life cycle model in detail.

(*b*) Discuss the significance of Spiral model.

Or

(*c*) Why do we require a model ? Discuss about the different types of models.

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(*d*) Compare between Spiral model and evolutionary model.

2. (*a*) Write the activities of project planning. What are the skills required for a s/w project manager ?

(*b*) What is risk management ?

Or

(*c*) What are the different estimation techniques ? Explain.

(*d*) Explain about COCOMO.

3. (*a*) What are the contents of SRS ? How the SRS is organised ?

(*b*) What is the objective of software design ? Explain different approaches of s/w design.

Or

(*c*) What is cohesion and coupling ? Why high cohesion and low coupling is a criteria for a good design ?

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(*d*) What is the importance of UML ? Draw the class diagram of ATM system.

4. (*a*) Write short notes on :

(*i*) Black box testing

(*ii*) White box testing.

(*b*) Define reliability of s/w. Write different metrices of reliability.

Or

(*c*) Differentiate between system testing and integration testing.

(*d*) What is software quality assurance ? What is CMM in s/w organization ?

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TBCS(3.2)

2019

Time : 3 hours

Full Marks : 80

Answer **all** questions

The figures in the right-hand margin indicate marks

Candidates are required to answer in their own words as far as practicable

(DATA COMMUNICATION AND COMPUTER NETWORK)

1. (*a*) What are the advantages of a multipoint connection over a point-to-point connection ? What are the criteria necessary for an effective and efficient network ? 10

   (*b*) Discuss the different types of networks and compare various transmission modes. 10

   Or

   (*c*) Discuss the different types of topology.

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Write the advantages and disadvantages of each topology. 10

(*d*) Distinguish between TDMA and TDM. 10

2. (*a*) What is OSI model ? Describe the characteristics of each layer of OSI model. 10

(*b*) What is pooling/selection protocol ? Write its significance. 10

Or

(*c*) Explain the HDLC transmission process. 10

(*d*) Explain the following : 10

(*i*) Goal of layered protocol

(*ii*) HDLC frame format.

3. (*a*) Compare and contrast between various switching techniques used in network. 10

(*b*) What is meant by LAN topology ? Discuss the various LAN topology and potocols. 10

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Or

(*c*) Explain the IEEE LAN standard with its important features. 10

(*d*) Explain the following : 10

(*i*) Token bus

(*ii*) Packet routing.

4. (*a*) Explain the application layer protocol. 10

(*b*) Explain the use of TCP/IP in internet works. 10

Or

(*c*) Explain the file transfer mechanism in Local area networks. 10

(*d*) Explain the following : 10

(*i*) TCP/IP operation and sockets

(*ii*) IP address structure.

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