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END SEMESTER EXAMINATION, DECEMBER - 2024**B. Tech. (CSE) Semester – VII/ B.Sc. (Hons.) in DS Semester – V****Course Name: Operations Research****Course Code: OCS473/BDS352****Time allotted: 03 Hours****Max. Marks: 100****Note: Read all the instructions carefully. Attempt all Sections & Questions.****Q.1. Attempt all.****(10×2=20)**

QN	Questions	CO	PO												
a.	While solving a linear programming model graphically, the area bounded by the constraints is called.....	1	8												
b.	In two-phase method, an.....variable is never considered for re-entry into the basis	1	8												
c.	A.....variable represent amounts by which solution values exceed a resource.	1	1												
d.	The amount of time that is expected to complete the activity is called.....	3	1												
e.	The saddle point of the following table is..... <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>-5</td><td>5</td><td>0</td><td>7</td></tr> <tr><td>2</td><td>6</td><td>1</td><td>8</td></tr> <tr><td>-4</td><td>0</td><td>1</td><td>-3</td></tr> </table>	-5	5	0	7	2	6	1	8	-4	0	1	-3	3	2
-5	5	0	7												
2	6	1	8												
-4	0	1	-3												
f.	A linear programming technique improves the quality of	1	2												
g.	The.....method is useful for game with larger payoff matrix without saddle point.	3	2												
h.	The saddle point of the following table is..... <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>1</td><td>7</td><td>3</td><td>4</td></tr> <tr><td>5</td><td>6</td><td>4</td><td>5</td></tr> <tr><td>7</td><td>2</td><td>0</td><td>3</td></tr> </table>	1	7	3	4	5	6	4	5	7	2	0	3	3	2
1	7	3	4												
5	6	4	5												
7	2	0	3												
i.	For a maximization problem the objective function coefficient for an artificial variable is	1	2												
j.	Expected length of non-empty queue is given by.....	4	2												

Q.2. Attempt any five out of Seven.**(5×4=20)**

Q.2: Attempt any five out of seven.							CO	PO
QN	Questions							
a.	Solve given assignment problem						2	2
		I	II	III	IV	V		
	A	85	15	65	125	75		
	B	90	78	66	132	78		
	C	75	66	57	114	69		
	D	80	72	60	120	72		
	E	76	64	56	112	68		
b.	Solve the following LPP by graphical method Min. $Z=5x_1+8x_2$.s.t. $x_1 \leq 4$ $x_2 \geq 2$ $x_1+x_2=5$ $x_1,x_2 \geq 0$						1	2

P.T.O./-

c.	Solve the following LPP Max. $Z = 2x_1 + x_2 + 3x_3$ s.t. $x_1 + x_2 + 2x_3 \leq 5$ $2x_1 + 3x_2 + 4x_3 = 12$ $x_1, x_2 \geq 0$	1																															
d.	Solve the following LPP by 2-Phase method Min. $Z = 6x_1 + 3x_2$ s.t. $x_1 + x_2 \geq 1$ $2x_1 - x_2 \geq 1$ $x_2 \leq 2$ $x_1, x_2 \geq 0$	1	2																														
e.	Solve the given transportation problem by N-W corner method. <table border="1"><tr><td></td><td>I</td><td>II</td><td>III</td><td>IV</td><td>Capacity</td></tr><tr><td>A</td><td>6</td><td>3</td><td>5</td><td>4</td><td>22</td></tr><tr><td>B</td><td>5</td><td>9</td><td>2</td><td>7</td><td>15</td></tr><tr><td>C</td><td>5</td><td>7</td><td>8</td><td>6</td><td>8</td></tr><tr><td>Demand</td><td>7</td><td>12</td><td>17</td><td>9</td><td></td></tr></table>		I	II	III	IV	Capacity	A	6	3	5	4	22	B	5	9	2	7	15	C	5	7	8	6	8	Demand	7	12	17	9		2	2
	I	II	III	IV	Capacity																												
A	6	3	5	4	22																												
B	5	9	2	7	15																												
C	5	7	8	6	8																												
Demand	7	12	17	9																													
f.	Solve the following LPP Max. $Z = x_1 + 2x_2 + 3x_3$ s.t. $x_1 + 2x_2 + 3x_3 \leq 10$ $x_1 + x_2 \leq 5$ $x_1, x_2, x_3 \geq 0$	1	2																														
g.	Find the optimal strategy for each of the player and the value of the game <table border="1"><tr><td>1</td><td>3</td></tr><tr><td>4</td><td>2</td></tr></table>	1	3	4	2	3	1																										
1	3																																
4	2																																

Q.3. Attempt any three out of four.

(3×10=30)

QN	Questions	CO	PO																
a.	Solve the following LPP by dual simplex method $\text{Min } Z = 10x_1 + 6x_2 + 2x_3$ s.t. $-x_1 + x_2 + x_3 \geq 1$ $3x_1 + x_2 - x_3 \geq 2$ $x_1, x_2, x_3 \geq 0$	1	1																
b.	Consider a situation where the mean arrival time (λ) is one customer every 6 minutes and the mean service time ($\frac{1}{\mu}$) is 4.5 minutes. Calculate the average number of customers in the system, average queue length, the average time a customer spend in the system and the average time a customer wait before being served.	4	2																
c.	Explain simplex method for a linear programming problems.	1	1																
d.	Solve the following game to find the optimal strategy <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>3</td><td>2</td><td>4</td><td>0</td></tr> <tr> <td>3</td><td>4</td><td>2</td><td>4</td></tr> <tr> <td>4</td><td>2</td><td>4</td><td>0</td></tr> <tr> <td>0</td><td>4</td><td>0</td><td>8</td></tr> </table>	3	2	4	0	3	4	2	4	4	2	4	0	0	4	0	8	3	1
3	2	4	0																
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Q.4. Attempt any two out of three.

(2×15=30)

QN	Questions	CO	PO																																																		
a.	Determine the optimal sequence of job which minimize the total elapsed time based on the following information <table><tr><td>Job</td><td>A</td><td>B</td></tr><tr><td>1</td><td>3</td><td>8</td></tr><tr><td>2</td><td>12</td><td>10</td></tr><tr><td>3</td><td>15</td><td>10</td></tr><tr><td>4</td><td>6</td><td>6</td></tr><tr><td>5</td><td>10</td><td>12</td></tr><tr><td>6</td><td>11</td><td>1</td></tr><tr><td>7</td><td>9</td><td>3</td></tr></table>	Job	A	B	1	3	8	2	12	10	3	15	10	4	6	6	5	10	12	6	11	1	7	9	3	2	1																										
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6	11	1																																																			
7	9	3																																																			
b.	The production department of a company requires 2400 kg of raw material for manufacturing a particular item per year. It has been estimated that the cost of placing an order is Rs 24 and the holding cost is Rs 105 per kg per year. Help the purchase manager to determine the (i) Annual ordering cost. (ii) The optimal lot size. (iii) The minimum yearly total inventory cost.	4	2																																																		
c.	A project has the following activities and other characteristics <table><tr><td>Activity</td><td>Preceding Activity</td><td>Optimistic Time (a)</td><td>Pessimistic Time(m)</td><td>Most likely Time(b)</td></tr><tr><td>A</td><td>-</td><td>4</td><td>7</td><td>16</td></tr><tr><td>B</td><td>-</td><td>1</td><td>5</td><td>15</td></tr><tr><td>C</td><td>A</td><td>6</td><td>12</td><td>30</td></tr><tr><td>D</td><td>A</td><td>2</td><td>5</td><td>8</td></tr><tr><td>E</td><td>C</td><td>5</td><td>11</td><td>17</td></tr><tr><td>F</td><td>D</td><td>3</td><td>6</td><td>15</td></tr><tr><td>G</td><td>B</td><td>3</td><td>9</td><td>27</td></tr><tr><td>H</td><td>E,F</td><td>1</td><td>4</td><td>7</td></tr><tr><td>I</td><td>G</td><td>4</td><td>19</td><td>28</td></tr></table> (i) Draw the network diagram for the project. (ii) Identify the critical path. (iii) Prepare the activity schedule for the project. (iv) Determine the mean project completion time. (v) Find the probability that the project is completed in 36 days.	Activity	Preceding Activity	Optimistic Time (a)	Pessimistic Time(m)	Most likely Time(b)	A	-	4	7	16	B	-	1	5	15	C	A	6	12	30	D	A	2	5	8	E	C	5	11	17	F	D	3	6	15	G	B	3	9	27	H	E,F	1	4	7	I	G	4	19	28	3	1
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END SEMESTER EXAMINATION, DECEMBER - 2024
BCA SEMESTER -V/ B. Tech. CSE Semester - VII

Course Name: Disaster Management

Course Code: BCA309/GES471

Time allotted: 03 Hours

Max. Marks: 100

Note: Read all the instructions carefully.

Q.1. Attempt all.

(10×2=20)

QN	Questions	CO	PO
a.	Define hazard.	1	8
b.	Give two examples of modern hazards.	1	5
c.	Define focus of earthquake.	1	8
d.	Write two manmade causes of floods.	2	8
e.	What is mitigation?	1	8
f.	Name any two phases of disaster management cycle.	3	5
g.	Write any one objective of sustainable development.	1	5
h.	How disasters and development is interrelated? Write two points.	2	5
i.	Write full form of NDRF.	1	5
j.	What is National Building Code?	1	5

Q.2. Attempt any five out of Seven.

(5×4=20)

QN	Questions	CO	PO
a.	What are different types of hazards?	1	5
b.	Write any five causes of forest fires.	1	8
c.	Write short note on prevention of biological hazards.	1	5
d.	Draw a well labeled disaster risk reduction cycle.	3	5
e.	How communities prepare itself for upcoming disasters?	3	5
f.	Why India is vulnerable for meteorological disasters?	2	8
g.	Write a short note on Hyogo protocol.	1	5

Q.3. Attempt any three out of four.

(3×10=30)

QN	Questions	CO	PO
a.	Brief about different types of hazards.	1	5
b.	What are the manmade causes of global warming?	2	8
c.	Describe importance of appropriate communication during the disaster crisis.	4	5
d.	Brief about non-structural mitigation measures for disasters.	3	5

Q.4. Attempt any two out of three.

(2×15=30)

QN	Questions	CO	PO
a.	Describe about different types of flood in detail. Also explain any case study on flash flood.	1	5
b.	Explain the role of NDRF and SDRF in disaster management.	2	5
c.	Discuss the interrelationship between development and disasters with examples.	3	8

END SEMESTER EXAMINATION, DECEMBER - 2024
BCA SEMESTER – V/ B. Tech. CSE Semester - VII

Course Name: Disaster Management

Course Code: BCA309/GES471

Time allotted: 03 Hours

Max. Marks: 100

Note: Read all the instructions carefully.

Q.1. Attempt all.

(10×2=20)

QN	Questions	CO	PO
a.	Define hazard.	1	2
b.	Give two examples of modern hazards.	1	5
c.	Define focus of earthquake.	1	8
d.	Write two manmade causes of floods.	2	8
e.	What is mitigation?	1	2
f.	Name any two phases of disaster management cycle.	3	5
g.	Write any one objective of sustainable development.	1	5
h.	How disasters and development is interrelated? Write two points.	2	5
i.	Write full form of NDRF.	1	5
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Q.2. Attempt any five out of Seven.

(5×4=20)

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a.	What are different types of hazards?	1	5
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g.	Write a short note on Hyogo protocol.	1	5

Q.3. Attempt any three out of four.

(3×10=30)

QN	Questions	CO	PO
1.	Brief about different types of hazards.	1	5
2.	What are the manmade causes of global warming?	2	8
c.	Describe importance of appropriate communication during the disaster crisis.	4	5
d.	Brief about non-structural mitigation measures for disasters.	3	5

Q.4. Attempt any two out of three.

(2×15=30)

QN	Questions	CO	PO
a.	Describe about different types of flood in detail. Also explain any case study on flash flood.	1	5
b.	Explain the role of NDRF and SDRF in disaster management.	2	5
c.	Discuss the interrelationship between development and disasters with examples.	3	8

Enrol. No. **S R H U**Regn. No. **D D****END SEMESTER EXAMINATION, DECEMBER - 2024****B. Tech. Semester - VII****Course Name: Software Testing****Course Code: ECS474****Time allotted: 03 Hours****Max. Marks: 100****Note: Read all the instructions carefully.****Q.1. Attempt all.****(10×2=20)**

QN	Questions	CO	PO
a.	What do you mean by software quality?	CO1	PO1,2
b.	Define Error Guessing testing technique.	CO2	PO1
c.	Define monkey testing.	CO4	PO1
d.	Explain debugging?	CO1	PO1
e.	Explain stress testing.	CO4	PO1
f.	Define Equivalence Partitioning testing technique.	CO2	PO1
g.	What do you mean by Test cases?	CO1	PO1,3
h.	What do you mean by alpha testing?	CO3	PO1,2
i.	What is defect seeding?	CO1	PO1
j.	Write the name of tool for regression testing.	CO4	PO1

Q.2. Attempt any five out of Seven.**(5×4=20)**

a.	Write the difference between testing and debugging?	CO1	PO1,2
b.	Write step to create a test scenario for amazon login form.	CO3	PO1,2,3
c.	What is decision table based testing? Explain with the help of an example.	CO2	PO1,2
d.	Write short notes on Test, Test Set, and Test Suite.	CO1	PO1
e.	What is dynamic program slicing? Explain dependence graph technique with example?	CO3	PO1,2
f.	What do you mean by non-functional testing? Explain load testing.	CO3	PO1,2
g.	Write principle of software testing in detail.	CO1	PO1

Q.3. Attempt any three out of four.**(3×10=30)**

a.	Explain the following terms – (i) Alpha testing (ii) Beta testing (iii) Big Bang Testing	(3+3+4)	CO3	PO1
b.	Attempt all. (i) What do you mean by top down integration testing? (ii) What do you mean by Test management (iii) Write the difference between stub and driver.	(3+3+4)	CO3	PO1,2
c.	Attempt All. (i) When should Regression testing be performed? (ii) Why we use decision tables? (iii) Why does the boundary value analysis provide good test cases?	(3+3+4)	CO2	PO1,2
d.	Attempt all. (i) How much testing is enough? (ii) Why we split testing into distinct stages? (iii) Define Error and Fault.	(3+3+4)	CO1	PO1,4

Q.4. Attempt any two out of three.**(2×15=30)**

a.	(i) What do you mean by acceptance testing? Explain types of acceptance testing. (ii) Explain design and architecture for automation testing.	CO3	PO1,2
b.	(i) What are different phases of test planning? Explain in detail. (ii) What do you mean by Deployment testing? Why we need.	CO5	PO1,3,4
c.	(i) Explain statement and branch coverage technique with the help of example. (ii) Explain validation and verification in testing?	CO5	PO1

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END SEMESTER EXAMINATION, DECEMBER - 2024
B. Tech. (CSE) Semester VII

Course Name: Cryptography & Network Security**Course code: CCS471****Time allotted: 03 Hours****Max. Marks: 100****Note: Read all the instructions carefully.****Q.1. Attempt All questions. Each carries equal marks.****(10X2=20)**

		CO	PO
a.	AES stands for	1	1
b.	Who is grey hat hacker?	1	2
c.	DoS and DDoS are same True or false	2	1
d.	What is rail fence cipher?	2	1
e.	Give examples of asymmetric key ciphers?	5	12
f.	Key size of DES is.....	2	1
g.	Name any computer worm	2	2
h.	IDS stands for....	3	2
i.	What you meant by honeypot?	3	1
j.	HTTP is more secure than HTTPS. True or false	5	1

Q.2. Attempt any five questions. Each carries equal marks**(5X4=20)**

a.	Explain masquerading attacks?	2	1
b.	What is Sieve of Eratosthenes?	1	2
c.	Explain malware and their types?	3	1
d.	What is TLS? Why we need it?	3	1
e.	Why public announcement is not considered safe for the distribution of public key	4	2
f.	What is ring?	5	2
g.	Compare MD-5 with SHA.	5	12

P.T.O./-

Q3. Attempt any three questions. Each carries equal marks.

(3X10=10)

a.	(i.) Explain the working of Feistel function? (ii) How Prime number are different from composite numbers? (iii) Find the GCD (630, 369) using Euclid's algorithm	2	2
b.	(i) Write in detail about CIA triad. (ii) Define any four types of cryptanalysis attacks (iii) How Vigenere cipher works?	1	1
c.	(i) What is a firewall and why it is used? (ii) How Elliptic curve cryptography is different from RSA? Write two applications of it (iii) Why Chinese remainder theorem is used? Write the algorithm for it	3	2
d.	(i) How public keys can be distributed? (ii) Explain Trojan horse (iii) What is Euler's Totient function?	5	2

Q4. Attempt any two questions. Each carries equal marks.

(2X15=30)

a.	(i) Explain Elgamal asymmetric key algorithm. (ii) What are Trojan horses? How they are different from Virus	1	2
b.	(i) What are properties required in secure hash functions. (ii) IPsec is family of algorithms. Explain any one in details.	3	2
c.	(i) What is rootkit? Who use it? (ii) Name three protocols used in SSH? Why SSH is considered secured.	4	1
