

Pandit Deendayal Energy University

End Semester Examination - November 2023

B. Tech.- V (Computer Engineering)

Semester – V

Date: 28/11/2023

Time: 3 hours

Max. Marks: 100

Course Name: Industry 4.0

Course Code: 20IF201T

Time: 10:00 AM to 1:00 PM

Instructions:

1. Do not write anything other than your roll number on the question paper.
2. Writing appropriate units, nomenclature and drawing neat sketches/schematics wherever required is an integral part of the answer.
3. Your answer must be to the point and precise.

PART-A					
(Use a Separate Answer Booklet for Part A and Part B)					
Q. No.	Description		Marks	COs	BTL
1	Explain the role of WSN, big data and cloud computing to implement and realize industry 4.0.		[10]	CO1	1
2	Discuss how wi-fi, zigbee and RFID is used to accomplish communication (data analysis & computation) between two devices in an IIoT (Industrial IoT).		[10]	CO2	2
3	Explain how a smart business model can be realized by integrating both data and intelligence		[10]	CO3	4
4	Discuss the evolution of industry 4.0 with suitable example. Also mention the benefits of industry 4.0.		[8+2]	CO4	3
5	Discuss the IIoT applications that utilizes data and intelligence to develop a smart industry..		[5]	CO5	5
6	Explain how Technology Road map provides means to achieve sustainable development.		[5]	CO6	6

PART-B					
Q. No.	Description		Marks	COs	
1	Explain the salient characteristics of Industry 3.0 and Industry 4.0 with examples.		[10]	CO1	1
2	Differentiate between Fixed automation and Programmable automation. Explain by using suitable examples.		[10]	CO2	2
3	What are Drones? List and explain various applications of Drones.		[10]	CO3	3
4	With the help of a neat sketch, explain the working principle of an Electron Beam melting (EBM) process. What are the advantages of EBM?		[10]	CO4	5
5	What are MEMS devices? Explain the practical applications of MEMS devices.		[5]	CO5	6
6	What are Satellites? Explain the significance of Communication satellites.		[5]	CO6	4

Pandit Deendayal Energy University

School of Technology

End Semester Examination – November-December 2023

B. Tech. (Computer Science and Engineering)

Semester – V

Course Name : Computer Network
Course Code : 20CP301T

Date: 29/11/2023

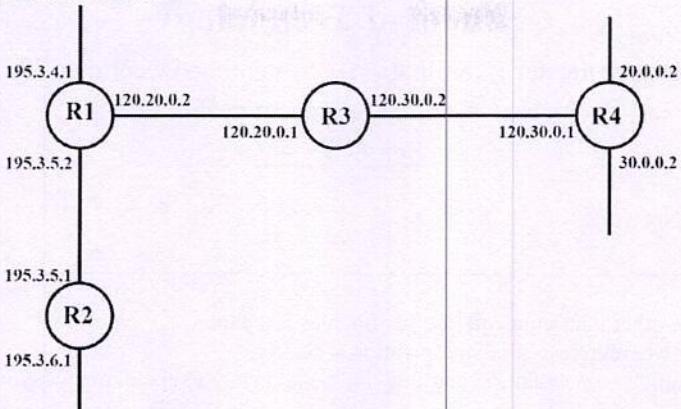
Time: 3 hours

Max. Marks: 100

Instructions:

1. Do not write anything other than your roll number on question paper.
2. Assume suitable data wherever essential and mention it clearly.
3. Writing appropriate units, nomenclature, and drawing neat sketches/schematics wherever required is an integral part of the answer.

Question No.	Description	Marks	Course Outcomes (CO's)										
1(a)	A group of N stations shares a 100 Kbps pure ALOHA channel. Each station outputs a 1000-byte frame on average once every 50 seconds. Calculate the maximum value of N.	5	CO1										
1(b)	List the various functionalities offered by data link layer.	5	CO2										
2	Compute the fraction of the BW that is wasted on overhead (header and retransmission) on a heavily loaded 50Kbps satellite channel with data frames consisting of 40 header and 3960 data bits. ACK frames never occur. NAK frames are 40 bits. The error rate for data transmission is 1%, and error rates for NAK frames are negligible. Assume number of packets are 100.	10	CO5										
	OR												
	Consider two nodes A and B on the same Ethernet segment, and suppose the propagation delay between the two nodes is 300 bit times. Suppose at time both nodes A and B begin to transmit a frame. Assume both nodes transmit a 60-bit jam signal after detecting a collision. For 10^7 bits per set Ethernet, find the time at which both nodes A and B sense an idle channel?												
3 (a)	What do you mean by the two-node loop instability problem with distance vector routing? Explain with suitable example.	5	CO-2										
3 (b)	Compare and contrast the recursive name resolution with the iterative name resolution approach.	5	CO-6										
4	<p>A router has the following entries in its routing table:</p> <table style="margin-left: 20px; border-collapse: collapse;"> <tr> <td style="padding-right: 20px;">Address/Mask</td> <td style="padding-right: 20px;">Next hop</td> </tr> <tr> <td>135.46.56.0/22</td> <td>Interface 0</td> </tr> <tr> <td>135.46.60.0/22</td> <td>Interface 1</td> </tr> <tr> <td>192.53.40.0/23</td> <td>Router 1</td> </tr> <tr> <td>default</td> <td>Router 2</td> </tr> </table> <p>For each of the following IP addresses, what does the router do if a packet with that address arrives?</p>	Address/Mask	Next hop	135.46.56.0/22	Interface 0	135.46.60.0/22	Interface 1	192.53.40.0/23	Router 1	default	Router 2	10	CO1
Address/Mask	Next hop												
135.46.56.0/22	Interface 0												
135.46.60.0/22	Interface 1												
192.53.40.0/23	Router 1												
default	Router 2												

	a. 135.46.63.10 b. 35.46.57.14 c. 135.46.52.2 d. 192.53.40.7 e. 192.53.56.7		
5	Apply the RIP strategy in the below network and calculate the routing table for each router. 	10	CO-3
6	An ISP granted the block of addresses starting with 10.80.0.0/16. ISP want to distribute it four groups of customers. a. First group has 64 customers, each need 256 addresses b. Second group has 128 customers, each need 128 addresses c. Third group has 64 customers, each need 32 addresses d. Last group also has 64 customers, each need 32 addresses. Design the subblock and how many addresses still available after allocation ? OR An IP datagram of size 1000 bytes arrives at a router. The router has to forward this packet on a link whose MTU (Maximum Transmission Unit) is 100 bytes. How many numbers of fragments that the IP datagram will be divided into for transmission? Mention the value of Total Length, DF, MF and Offset for each fragment.	10	CO-3
7	Draw the TCP header format and describe its various fields in brief.	10	CO-2
8 (a)	Describe the various flow characteristics that fall under QoS.	5	CO-5
8 (b)	Consider a token ring network with a length of 2 km having 10 stations, including a monitoring station. The propagation speed of the signal is 2×10^8 m/s, and the token transmission time is ignored. If each station is allowed to hold the token for 2 μ s, then what will be the minimum time (in μ s) for which the monitoring station should wait before assuming that the token is lost?	5	CO-5
9	Discuss the congestion control policies using suitable example in terms of convergence and stability.	10	CO-4
10	Summarize the different scenarios that may occur during electronic mail transfer.	10	CO-6

Pandit Deendayal Energy University
School of Technology
End Semester Examination
B. Tech. Computer Engineering
Semester – V

Course Name: System Software and Compiler Design
Course Code: 20CP302T

Date: 30/11/2023
Time: 10:00 AM to 1:00 PM
Max. Marks: 100

Instructions:

1. Do not write anything other than your roll number on question paper.
2. Assume suitable data wherever essential and mention it clearly.
3. Writing appropriate units, nomenclature, and drawing neat sketches/schematics wherever required is an integral part of the answer.

		Marks	CO
Q-1	<p>(a) Define pass in a compiler. Differentiate between front end and back end of the compiler.</p> <p>(b) Identify the language from the following expressions (Any one):</p> <ol style="list-style-type: none"> (i) $(00 11)^*((01 10)(00 11)^*(01 10)(00 11)^*)$ (ii) $b^* b^*a+b^*a+ba^*$ <p>(c) Construct minimized DFA for the following regular expression using syntax tree method: $a^*b?a(a b)^*b^*a\#$</p> <p>(d) The lexical analyzer uses given patterns for recognizing three tokens, Token1, Token2, and Token3, over the alphabets {x, y, z}. Token1: $x?(y z)^*x$ & Token2: $y?(x z)^*y$ & Token3: $z?(y x)^*z$. Note: ‘?’ means 1 or 0 occurrences of the symbol before ?. Also, the analyzer outputs the token matching the longest possible prefix. If the analyzer processes the string "yyxxzxyz". What is the sequence of tokens it outputs?</p>	03 02 07 03	CO1
Q-2	<p>(a) Construct LL(1) parsing table for the following grammar:</p> <pre> start -> stmts EOF stmts -> ε stmt stmnts stmt -> ifStmt whileStmt id = NUM ifStmt -> IF id { stmnts } whileStmt -> WHILE id { stmnts } </pre> <p>(b) Explain elimination of left recursion with an example. OR (b) Explain dangling else problem with an example.</p> <p>(c) Write a Syntax Directed Translation (SDT) Scheme to convert infix expression to prefix. Construct a parse tree to convert $8 + 3 * 2$ into prefix using SDT.</p>	07 03 03 05	CO2
Q-3	<p>(a) Compare and contrast top-down and bottom-up parsers.</p>	04	CO2

	<p>(b) Check whether following grammar is LALR or not?</p> $E \rightarrow E + T \mid T$ $T \rightarrow TF \mid F$ $F \rightarrow F^* \mid a \mid b$ <p style="text-align: center;">OR</p> <p>(b) Check whether following grammar is SLR or not?</p> $S \rightarrow id = A !$ $A \rightarrow id = A \mid E$ $E \rightarrow id \mid (id !) \mid (A)$ <p>(c) Construct Operator precedence table for the following grammar: $R \rightarrow R \cdot R \mid R \cdot R \mid R^* \mid (R) \mid a \mid b$, where '$\cdot$' is union operator. Also parse the string $(a b)^*ba$</p>	10	CO2
Q-4	<p>(a) Explain memory representations of three address intermediate code generation with examples.</p> <p>(b) Generate target code in assembly language for the following sequence:</p> $s = 0$ $i = 0$ <p>L1: if $i > n$ goto L2</p> $s = s + i$ $i = i + 1$ <p>L2:</p> <p>(c) Convert the following program into three address code.</p> <pre>for j = 2 to n { key ← A[j] i ← j - 1 while (A[i] > key and i > 0) { A[i + 1] ← A[i] i ← i - 1 } A[i + 1] ← key }</pre>	06 04 05	CO3
Q-5	<p>(a) Construct basic blocks and Flow graph from three address code generated in question 4(c). Apply any two optimization techniques on the flow graph.</p> <p>(b) Construct a Directed Acyclic Graph for the following three address code:</p> $x = y * z$ $t1 = x * y$ $z = x - t1$ $y = t1 \% z$ $t2 = d + x$ $x = t2 + y$ <p>(c) Explain any two peephole optimization techniques with examples.</p>	12 04 04	CO4
Q-6	<p>(a) Explain different types of Loader with their advantages and disadvantages.</p> <p style="text-align: center;">OR</p> <p>(a) What is linker? Explain working of linker with an example.</p>	05	CO5

	(b) Show the output and data structures generated by PASS-1 assembly process for the following code:	10	CO6
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START 100
MOVER AREG, = '4'
L1 MOVER BREG, = '2'
SUB BREG, X
L2 MOVEM BREG, Y
LTORG
ORIGIN L2 + 5
ADD AREG, ='3'
STOP
Y DS 3
X DC '5'
END

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Pandit Deendayal Energy University

End Semester Examination - December 2023

B. Tech. (CE)

Semester - V

Date: 01/12/2023

Time: 3 hours

Max. Marks: 100

Course Name : Software Engineering

Course Code : 20CP303T

Instructions:

1. Do not write anything other than your roll number on question paper.
2. Assume suitable data wherever essential and mention it clearly.
3. Writing appropriate units, nomenclature, and drawing neat sketches/schematics wherever required is an integral part of the answer.

NOTE: Attempt any five.

		<u>Marks</u>	<u>CO</u>
Q1.	Draw the object association diagram with multiplicity for following sentences.	2x5=10	[CO2]
(A)	<ul style="list-style-type: none"> (i) One vehicle may have two or more wheels but at most one sunroof. (ii) A house has exactly one kitchen, one bathroom, one or more bedroom, at most one worship room and at least two balcony. (iii) A game may be played by two or more players, but a player may not always participate in the game. (iv) Zero or more students enrolled in 1 or more courses. (v) Two or more lines segments may intersect at zero or one point. 		
(B)	A DD graph of single procedure contains 8 nodes, namely (A, B, C, D, E, F, G and H). In which nodes C, E, F and G are predicate nodes. Node C have 3 emanating edges, node E have 5 emanating edges, node F have 2 emanating edges and node G have 4 emanating edges. In other words the out degree of nodes C, E, F, G are 3,5,2,4 respectively. Calculate the number of edge in the DD graph.	10	[CO3]
Q2.	<p>A program is to be installed to control the lift in a building with 6 floors. The problem concerns the logic required to move lift between floors according to the following rules:</p> <ol style="list-style-type: none"> 1. Lift has a set of 7 buttons, one for each floor. These illuminate when pressed and cause the lift to visit the corresponding floor after closing the door. The illumination is canceled when the lift visits the corresponding floor and door is open. 2. Each floor, except the first floor and top floor has two buttons, one to request an up-lift and one to request a down-lift. These buttons illuminate when pressed. The illumination is canceled when a lift visits the floor and then open the door. 3. When a lift has no requests, it remains at its current floor with its doors closed. <p>Draw the sequence diagram of interaction of passenger with</p> <ul style="list-style-type: none"> A) Lift button B) Floor button. 	10+10	[CO1]
Q3.	List out all the events which trigger the state transitions and draw a state-transition diagram for a media player with three buttons: stop, play and pause. The initial state of the player is stopped. In each state, only the buttons for the other states can be pressed (e.g. in play, only the stop and pause buttons can be pressed). Pressing the pause button when the player is stopped does not result in any change to the player.	10	[CO5]

(B)	How to find the number of test cases in weak equivalence classes and strong equivalence classes. Is it possible in any situation that number of test cases in weak and strong equivalence is same? If your answer is yes then describe the one situation with example otherwise justify why it is not possible?	10 [CO3]		
Q4.	List out all the events which trigger the state transitions and draw a state-	10 [CO4]		
(A)	transition diagram for a door which can be in one of the three states: Opened, Closed and Locked. The door is initially open. An open door can be closed if stopper up side. A closed door can be opened if it is not locked. A closed door can be locked. A locked door can be unlock. An open door cannot be locked.			
(B)	Find cyclomatic complexity for the given code using all three methods.	<pre> 1. a = 15 ; 2. if (a > b) 3. a = b ; 4. else { 5. if (a > c) </pre>	<pre> 6. b = c ; 7. else 8. c = a ; 9. } 10. print a,b,c ; </pre>	10 [CO5]
Q5.	Consider an application that requires two integer inputs A and B. Each of these input is expected to lie in the following range: $27 \leq A \leq 52$ and $15 \leq B \leq 29$. Find the equivalence classes for uni-dimensional and multi-dimensional partitioning?	10 [CO3]		
(B)	Consider the following program. Find the test cases for 80% statement coverage. Also find the minimum number of test cases required (with input) for achieving 100% statement coverage?	10 [CO5]		
	<pre> 1.char operator; 2.int a=8,b=2; 3.printf("Enter choice (+,- ,*,/):"); 4.scnf("%c", &operator); 5.switch(operator) { 6. case '+': 7. printf("Output is %d\n", a+b); 8. case '-': </pre>	<pre> 9. printf("Output is %d\n", a-b); 10. case '*': 11. printf("Output is %d\n", a*b); 12. case '/': 13. printf("Output is %d\n", a/b); 14. default: 15. printf(" Invalid Operator \n"); </pre>		
Q6.	Consider a procedure P in which following inputs are required. Id (0-999), Gander ('M' or 'F'), Age (0-100) and Amount (5000-10000). For this procedure calculate the size of input domain.	10 [CO2]		
(B)	Find the two equivalent mutants of the program and make an output table of original program and both mutant for some test inputs.	10 [CO5]		
	<pre> 1. void main() { 2. int a,b,c=5; 3. scnf("%d", &a); 4. scnf("%d", &b); 5. if((a==2)&&(b==2) 6. c= a + b ; 7. printf("%d", c); 8. } </pre>			

Roll No. _____

Pandit Deendayal Energy University

End Semester Examination
B. Tech. (Computer Science & Engg.)

Semester - V

Date: 04-12-2023

Time: 3 hours

Max. Marks: 100

Course Name : Information Security

Course Code : 20CP304T

Instructions:

1. Do not write anything other than your roll number on question paper.
2. Assume suitable data wherever essential and mention it clearly.
3. Writing appropriate units, nomenclature, and drawing neat sketches/schematics wherever required is an integral part of the answer.
4. Show the steps during any computation.

Q.1	<p>State True/False and Justify your answers with description/calculation:</p> <p>(a) Euler's Totient $\phi(165) = 80$. (b) Synchronous stream ciphers are usually faster and more efficient. (c) Meet-in-the-middle attacks on multiple DES techniques, usually involve encryption from one end, decryption from the other and matching the results in the middle. (d) Encryption process of triple DES makes it slower, but adds more security than DES. (e) In RSA digital signatures, symmetric key is used to verify the signature. (f) In Feistel cipher structure, $LD_1 = LE_{15}$ and $RD_1 = RE_{15}$. (g) For sender A and receiver B, authentication and signature can be achieved using Public key of A at sender side and Private key of A at receiver side. (h) In ECC, the inverse of point $P = (x_1, y_1)$ is $Q = (-x_1, y_1)$. (i) 2 is a primitive root of prime number 5. (j) In the <i>adaptive chosen message</i> attack on digital signature, the attacker first learns signatures on arbitrary messages of the attacker's choice.</p>	20	CO1																																																																																				
Q.2	<p>(a) Explain decryption in Playfair cipher with an example. (b) Determine the inverse mod 26 of $\begin{bmatrix} 2 & 3 \\ 1 & 22 \end{bmatrix}$.</p>	5+5	CO2																																																																																				
Q.3	<p>(a) Calculate the output for the following inputs after passing through the s-Box of DES defined below:</p> <table style="margin-left: auto; margin-right: auto;"><tr><td style="text-align: center;">0</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td><td style="text-align: center;">3</td><td style="text-align: center;">4</td><td style="text-align: center;">5</td><td style="text-align: center;">6</td><td style="text-align: center;">7</td><td style="text-align: center;">8</td><td style="text-align: center;">9</td><td style="text-align: center;">10</td><td style="text-align: center;">11</td><td style="text-align: center;">12</td><td style="text-align: center;">13</td><td style="text-align: center;">14</td><td style="text-align: center;">15</td></tr><tr><td style="text-align: center;">0</td><td style="text-align: center;">14</td><td style="text-align: center;">4</td><td style="text-align: center;">13</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td><td style="text-align: center;">15</td><td style="text-align: center;">11</td><td style="text-align: center;">8</td><td style="text-align: center;">3</td><td style="text-align: center;">10</td><td style="text-align: center;">6</td><td style="text-align: center;">12</td><td style="text-align: center;">5</td><td style="text-align: center;">9</td><td style="text-align: center;">0</td><td style="text-align: center;">7</td></tr><tr><td style="text-align: center;">1</td><td style="text-align: center;">0</td><td style="text-align: center;">15</td><td style="text-align: center;">7</td><td style="text-align: center;">4</td><td style="text-align: center;">14</td><td style="text-align: center;">2</td><td style="text-align: center;">13</td><td style="text-align: center;">1</td><td style="text-align: center;">10</td><td style="text-align: center;">6</td><td style="text-align: center;">12</td><td style="text-align: center;">11</td><td style="text-align: center;">9</td><td style="text-align: center;">5</td><td style="text-align: center;">3</td><td style="text-align: center;">8</td></tr><tr><td style="text-align: center;">2</td><td style="text-align: center;">4</td><td style="text-align: center;">1</td><td style="text-align: center;">14</td><td style="text-align: center;">8</td><td style="text-align: center;">13</td><td style="text-align: center;">6</td><td style="text-align: center;">2</td><td style="text-align: center;">11</td><td style="text-align: center;">15</td><td style="text-align: center;">12</td><td style="text-align: center;">9</td><td style="text-align: center;">7</td><td style="text-align: center;">3</td><td style="text-align: center;">10</td><td style="text-align: center;">5</td><td style="text-align: center;">0</td></tr><tr><td style="text-align: center;">3</td><td style="text-align: center;">15</td><td style="text-align: center;">12</td><td style="text-align: center;">8</td><td style="text-align: center;">2</td><td style="text-align: center;">4</td><td style="text-align: center;">9</td><td style="text-align: center;">1</td><td style="text-align: center;">7</td><td style="text-align: center;">5</td><td style="text-align: center;">11</td><td style="text-align: center;">3</td><td style="text-align: center;">14</td><td style="text-align: center;">10</td><td style="text-align: center;">0</td><td style="text-align: center;">6</td><td style="text-align: center;">13</td></tr></table> <p>i) 100101 ii) 011001</p>	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	0	14	4	13	1	2	15	11	8	3	10	6	12	5	9	0	7	1	0	15	7	4	14	2	13	1	10	6	12	11	9	5	3	8	2	4	1	14	8	13	6	2	11	15	12	9	7	3	10	5	0	3	15	12	8	2	4	9	1	7	5	11	3	14	10	0	6	13	5+5	CO3
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15																																																																								
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3	15	12	8	2	4	9	1	7	5	11	3	14	10	0	6	13																																																																							

	(b) What do you mean by discrete logarithm? Find the discrete logarithm of 5 to the base 3, modulo 19.		
Q.4	Draw and explain in detail the overall structure of AES Encryption algorithm with the help of a neat diagram and analyze its security.	10	CO4
Q.5	Discuss the following block cipher modes of operation in detail along with their applications and diagrams: (a) Electronic Code Book (b) Output feedback	10	CO6
Q.6	Mention the need of asymmetric cipher in real time application. Differentiate between symmetric and asymmetric ciphers. Showcase RSA steps with a suitable example.	3+2 +5	CO6
Q.7	Explain and prove Man-in-middle attack on the Diffie-Hellman key exchange protocol using a numerical example.	5+5	CO5
Q.8	Analyze and explain Message Digest Generation using SHA -512 with a neat diagram. OR Analyze and explain SHA-512 round function in detail along with the round function elements.	10	CO5
Q.9	Suppose you are given the following parameters for a DSA signature: - Prime number (p): 67 - Subgroup order (q): 11 - Generator (g): 3 - Private key (x): 7 - Hash of the message (H(m)): 47 Calculate the DSA signature for the message m using the given parameters. OR Given the following ElGamal parameters: - Prime number (p): 71 - Generator (g): 7 - Private key (x): 4 - Random value (k): 5 - Hash of the message (H(m)): 28 Calculate the ElGamal digital signature for the message m using the given parameters.	10	CO5

Roll No. _____

Pandit Deendayal Energy University

End Semester Examination: November - December - 2023

B. Tech. Computer Science & Engineering

Semester - V

Date: 06.12.2023

Time: 3 hours

Max. Marks: 100

Course Name : Introduction To Web Technology

Course Code : 23CP306T

Instructions:

1. Do not write anything other than your roll number on question paper.
2. Assume suitable data wherever essential and mention it clearly.
3. Writing appropriate units, nomenclature, and drawing neat sketches/schematics wherever required is an integral part of the answer.

Question No.	Description				Mark s	Course Outcomes (CO's)
Q-1	Do As Directed.				20*1 =20	
	(1)	This JavaScript method often comes in handy with text inputs because it allows you to replace certain characters with other characters. a) replace() b) roplace() c) repu() d) SyntaxError	(2)	Find out the meaning of this expression in JS: \n a) Linefeed b) Carriage return c) Tab d) Vertical tab		CO1 CO2
	(3)	Find out the meaning of this expression in JS: \r a) Linefeed b) Carriage return c) Tab d) Vertical tab	(4)	What is the purpose of the onsubmit attribute in the form tag? a) It defines the action URL for form submission. b) It specifies the method for handling form data. c) It triggers a JavaScript function for form validation before submission.. d) It sets the form's name for identification purposes.		
	(5)	Which HTTP version does not use the concept of header compression for faster data transfer? a) HTTP/1.0	(6)	In computer science, what is the main difference between lightweight and heavyweight protocols?		

		b) HTTP/1.1 c) HTTP/2.0 d) HTTP/3.0		a) Lightweight protocols are faster but less secure b) Heavyweight protocols have fewer functionalities c) Lightweight protocols have less overhead but may sacrifice some functionalities d) Heavyweight protocols are always preferred for sporadic queries		
(7)	What is the primary role of server software in the context of the World Wide Web? a) It provides access to information from client systems. b) It enables the functioning of web browsers. c) It connects different web servers globally. d) It facilitates communication between server and client applications.	(8)	The 'OPTIONS' method in HTTP is primarily used for: a) Requesting information about the communication options available for a resource. b) Retrieving the current state of a resource. c) Deleting a resource from the server. d) Modifying a resource's data.			
(9)	<pre><html> <head> <title>My Web Page</title> </head> <body> <h1>Hello,John!</h1> </body> </html></pre> <p>What JavaScript code snippet can be used to change the name from "John" to "Jane" dynamically?</p> <p>a) <code>document.getElementByName("name").innerHTML = "Jane";</code></p> <p>b) <code>document.getElementById("name").innerText = "Jane";</code></p> <p>c) <code>document.querySelector("#name").textContent = "Jane";</code></p> <p>d) <code>document.getElement("name").innerText = "Jane";</code></p>	(10)	JavaScript's _____ method is used to find the index of the first occurrence of a specified value in an array.			
(11)	The _____ method in JavaScript is used to add one or more elements to the end of an array and	(12)	_____ URLs specify the exact location of a resource from the root of			

		returns the new length of the array.		the web server.		
(13)	HTTP caching can lead to quicker display by the browser, reduced _____, and decreased load on the web server.	(14)	One approach to ensuring the validity of a cached copy of a resource is by using the _____ method, which returns only the status line and header portion of the response.			
(15)	_____ method in HTTP respond to future HTTP request messages that contain the specified Request-URI with a response indicating that there is no resource associated with this Request-URI.	(16)	The response message in this case begins with the line <i>HTTP/1.1 200 OK</i> which is known as the _____ line of the response.			
(17)	The initial version of HTTP was referred to as HTTP/_____	(18)	The second part of the start line in HTTP is known as the _____			
(19)	_____ method in HTTP return the resource specified by the Request-URI as the body of a response message	(20)	_____ method in HTTP pass the body of this request message on as data to be processed by the resource specified by the Request-URI.			
Q-2	Do As Directed (ANY FOUR).			4*10 =40		
(a)	What HTML tags would you use to produce the following web content? 1. A small heading with the words We are Proud to Present 2. A horizontal rule across the page 3. A large heading with the one word Orbit 4. A medium-sized heading with the words The Geometric Juggler 5. Another horizontal rule				CO3	
(b)	What would you use to create a definition list to show that the word glunch means “a look of disdain, anger, or displeasure” and that the word glumpy means “sullen, morose, or sulky”?					
(c)	How would you create a simple two-row, two-column table with a standard border? Expanding on question, how would you add 30 pixels of space between the table border and the cells? Continuing with the table you’ve built, how would you make the top-left cell green, the top-right cell red, the bottom-left cell yellow, and the bottom-right cell blue?					
(d)	What HTML code could you use to display the words “Where would you like to” starting exactly at the upper-left corner of the browser window and displays the words “GO TODAY?” in large type exactly 80 pixels down and 20 pixels to the left of the corner?					
(e)	Develop the HTML and CSS code to apply effect to the second item (as following) using nth-last-child(n):					

	<p>First line here</p> <h2>Second line here</h2> <p>Third line here</p> <p>Fourth line here</p> <p>Fifth line here</p>		
Q-3	Do As Directed (ANY FOUR).	4*10 =40	
(a)	<p>Develop a PHP code to Remove Newlines (\n) from both sides of the String using <i>trim()</i>.</p> <p>For example,</p> <p>Input: \n\nHello, World!\n\n</p> <p>Output: Hello, World!</p>		CO4
(b)	<p>Create a PHP code to print this statement using <i>implode()</i>: Frank,Smith,Male</p> <p>(Hint: Use associative array and consider Frank as company name, Smith as domain)</p>		
(c)	<p>Generate a JSP code for following output:</p> <p>Your virtual coin has landed on heads.</p> <p>Your virtual coin has landed on tails.</p> <p>Your virtual coin has landed on tails.</p> <p>Your virtual coin has landed on heads.</p> <p>Your virtual coin has landed on tails.</p>		CO5
(d)	Develop a HTML document that displays its last modified date using JavaScript.		CO6
(e)	<p>Create a CSS rule that will make the following changes to the navigation:</p> <ol style="list-style-type: none"> 1. Add a single pixel gray border on the top and bottom. 2. Give it 20 pixels of margin above and below the gray lines. 3. Give it 10 pixels of padding on the top and bottom in the box. 4. Add a margin to the right of each link in the navigation. 		

Roll No. _____

Pandit Deendayal Energy University

School of Technology

End Semester Examination – November-December 2023

B. Tech. (Computer Science and Engineering)

Semester – V

Course Name: Advanced Python Programming
Course Code: 23CP301T

Date: 07/12/2023

Time: 3 hours

Max. Marks: 100

Instructions:

1. Do not write anything other than your roll number on question paper.
2. Assume suitable data wherever essential and mention it clearly.
3. Writing appropriate units, nomenclature, and drawing neat sketches/schematics wherever required is an integral part of the answer.

Question No.	Description	Marks	Course Outcomes (CO's)
1	<p>Determine the output of the code: Animal_sata.txt</p> <p>Jaguar, Jungle Area A, 15, Nocturnal, Good Giant Otter, River Basin B, 20, Social, Fair Harpy Eagle, Mountain Range C, 10, Solitary, Excellent Spider Monkey, Canopy Zone D, 30, Arboreal, Good</p> <p>Code:</p> <pre>import json def create_json_from_txt(txt_file): animals = [] with open(txt_file, 'r') as file: lines = file.readlines() for line in lines: data = line.strip().split(',') animal = { "Species": data[0], "Location": data[1], "Population": int(data[2]), "Behavior": data[3], "Health": data[4] } animals.append(animal) json_data = {"animals": animals} return json_data json_data = create_json_from_txt('animal_data.txt') print(json.dumps(json_data, indent=2))</pre>	5 Marks	CO1

<p>Determine the output (Console/log file) of the code:</p> <pre> import numpy as np import logging logging.basicConfig(filename='deep_learning.log', level=logging.INFO, format='%(asctime)s - %(levelname)s - %(message)s') def matrix_multiplication(matrix_a, matrix_b): try: result = np.dot(matrix_a, matrix_b) logging.info(f"Matrix multiplication successful: {matrix_a.shape} * {matrix_b.shape} = {result.shape}") return result except Exception as e: logging.error(f"Error occurred during matrix multiplication: {e}") return None def initialize_weights(input_size, output_size): weights = np.random.rand(input_size, output_size) logging.info(f"Weights initialized: {weights.shape}") return weights def forward_pass(data, weights): output = matrix_multiplication(data, weights) if output is not None: logging.info("Forward pass completed successfully.") else: logging.warning("Forward pass did not complete due to errors.") return output </pre> <p>2</p> <pre> def backward_pass(output, labels): try: error = output - labels logging.info("Backward pass (Error calculation) completed successfully.") return error except Exception as e: logging.error(f"Error occurred during backward pass: {e}") return None def update_weights(data, error, learning_rate): try: gradient = np.dot(data.T, error) updated_weights = learning_rate * gradient logging.info("Weights update completed successfully.") return updated_weights except Exception as e: logging.error(f"Error occurred during weight update: {e}") return None </pre> <pre> data = np.random.rand(100, 50) # Example data labels = np.random.rand(100, 10) # Example labels learning_rate = 0.01 weights = initialize_weights(data.shape[1], labels.shape[1]) output = forward_pass(data, weights) error = backward_pass(output, labels) updated_weights = update_weights(data, error, learning_rate) </pre>	<p>10 Marks</p> <p>CO6</p>
--	--------------------------------

	Determine the output of the code:		
3	<pre>import numpy as np simpler_matrix = np.array([[1, 2, 3, 4],[5, 6, 7, 8],[9, 10, 11, 12],[13, 14, 15, 16]]) lower_triangular_matrix = np.tril(np.ones((4, 4))) result_matrix = np.multiply(simpler_matrix, lower_triangular_matrix) column_sum = np.sum(result_matrix, axis=0) print("Result Matrix:") print(result_matrix) print("\nColumn-wise Sum of Result Matrix:") print(column_sum)</pre>	10 Marks	CO5
4	<p>Determine the output of the code:</p> <pre>class SleepSyndromeException(Exception): def __init__(self, message="Irregular bioluminescent patterns detected - Sleep Syndrome suspected."): self.message = message super().__init__(self.message) def alert_conservationists(self): print(f'ALERT: {self.message} Notify the wildlife conservation team immediately!') def monitor_nocturnal_activity(): detected_irregular_pattern = True if detected_irregular_pattern: raise SleepSyndromeException() try: monitor_nocturnal_activity() except SleepSyndromeException as e: e.alert_conservationists()</pre>	5 Marks	CO2
5	<p>Determine the output of the code:</p> <pre>from bs4 import BeautifulSoup html_content = "" <!DOCTYPE html> <html> <head> <title>Merged Column-Based Table</title> </head><body> <h2>Merged Column-Based Table</h2> <table> <tr> <th>Name</th> <th colspan="2">Details</th> <th>Location</th> </tr> <tr> <td>John</td> <td>Age: 30</td> <td>Gender: Male</td> <td>New York</td></tr> <tr> <td>Mary</td> <td>Age: 25</td> <td>Gender: Female</td> <td>Los Angeles</td></pre>	6 Marks	CO4

	<pre> </tr> </table> </body> </html>""" soup = BeautifulSoup(html_content, 'html.parser') table = soup.find('table') extracted_data = [] for row in table.find_all('tr'): columns = row.find_all(['th', 'td']) row_data = [col.get_text(strip=True) for col in columns] extracted_data.append(row_data) for row in extracted_data: print(row) </pre>				
	<p>Write the complete code by filling in the correct code in the given spaces. The task is to automate the process of organizing '.txt' files in a specified directory. Your script should:</p> <ol style="list-style-type: none"> 1. Scan a given directory for all '.txt' files. 2. Create a new directory named 'Processed' within the scanned directory. 3. Move all '.txt' files to the 'Processed' directory. 4. In the 'Processed' directory, create a summary report named 'summary.txt', listing the names and creation dates of all processed files. 				
6	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;">INPUT Directory Structure: MainDirectory/ file1.txt file2.txt image.jpg document.pdf ...</td><td style="padding: 5px;">OUTPUT Directory Structure: MainDirectory/ Processed/ file1.txt file2.txt summary.txt</td></tr> </table> <p>summary.txt</p> <p>Example:</p> <p>file1.txt - Creation Date: 2023-01-10 file2.txt - Creation Date: 2023-01-11</p> <pre> # Import required libraries import os import time # Function to scan and organize .txt files def organize_txt_files(directory): # Check if 'Processed' directory exists, if not create it <<1. Write your code here>> # List all .txt files in the specified directory txt_files = <<2. Write your code here>> # Move .txt files to 'Processed' directory and prepare summary data summary_data = [] for file in txt_files: <<3. Write your code to move the file to 'Processed' directory>> creation_date = <<4. Write your code to get the file's creation date>> summary_data.append(f'{file} - Creation Date: {creation_date}') </pre>	INPUT Directory Structure: MainDirectory/ file1.txt file2.txt image.jpg document.pdf ...	OUTPUT Directory Structure: MainDirectory/ Processed/ file1.txt file2.txt summary.txt	2+2+ 2+2+ 2+2 = 12 Marks	CO3
INPUT Directory Structure: MainDirectory/ file1.txt file2.txt image.jpg document.pdf ...	OUTPUT Directory Structure: MainDirectory/ Processed/ file1.txt file2.txt summary.txt				

	<pre># Write the summary report to 'summary.txt' in 'Processed' directory with open(<<5. Specify the path to 'summary.txt'>>, 'w') as summary_file: <<6. Write your code to write summary_data to summary_file>> # Call the function with the path to the main directory organize_txt_files('path_to_main_directory')</pre>		
	<p>Fill in the blanks by completing the code for: (1) Import required libraries (2) add the given 2 arrays (3) Loading data.csv and data.xlsx files (4) Pre-process data.csv by Removing Null Values (5) Get Basic Statistical Details from the pre-processed data (6) Create histogram by labelling 'Y' axis as 'Frequency' (7) Plotting scatter plot (8) Create a Box plot with the given Title.</p> <pre># import libraries <1. Write the code> <2. Write the code> import matplotlib.pyplot as plt import seaborn as sns # Handling Array Operations with Numpy arr1 = np.array([1, 2, 3, 4, 5]) arr2 = np.array([6, 7, 8, 9, 10]) result_array = <3. Write the code> #sum above 2 array # Importing and Loading Data with Python # Assuming you have a CSV file named 'data.csv' data = <4. Write the code> # Data Cleaning and Preparation by Removing Null Values cleaned_data = <5. Write the code> # Get Basic Statistical Details descriptive_stats = cleaned_data.<6. Write the code> # Correlation Analysis correlation_matrix = <7. Write the code> # Data Visualization # Create a Histogram Column1 in cleaned_data with bins=20, in blue color, with alpha value =0.7 <8. Write your code> plt.title('Histogram of Column1') plt.xlabel('Values') plt.ylabel('Frequency')# Label 'Y' and name as 'Frequency' plt.show() # create a Scatter Plot between column 1 and column 2 in cleaned_data <9. Write your code> plt.title('Scatter Plot of Column1 vs Column2') plt.xlabel('Column1') plt.ylabel('Column2') plt.show()</pre>	1+1+ 1+2+ 2+2+ 2+2+ 2= 15 Marks	CO5
7			

	Choose The correct option and Justify your answer-		
8	I - What is the purpose of the finally block in exception handling? a. To handle exceptions b. To execute code whether an exception is raised or not c. To specify the type of exception d. To close the program		2*6 = 12 Marks CO4
	II- Which of the following is not a valid way to run an external command from a Python script? a. os.system("command") b. subprocess.run("command") c. execute("command") d. os.exec("command")		
	III- What is BeautifulSoup used for in web scraping with Python? a. Handling exceptions b. Parsing HTML and XML documents c. Executing JavaScript code d. Automating tasks		
	IV - Which HTTP method is typically used for web scraping? a. GET b. POST c. PUT d. DELETE		
	V- What does the head() function in Pandas do? a. Returns the last rows of the DataFrame b. Returns the first rows of the DataFrame c. Removes duplicate rows d. Sorts the DataFrame		
	VI- What is the purpose of the requests module in web scraping? a. Parse HTML documents b. Send HTTP requests c. Execute JavaScript code d. Extract data from a database		
9	State True/False and Justify the answer in detail I. Web scraping involves extracting information from websites by interacting with their databases. II. The 'finally' block in a try-except statement is optional. III. The 'with' statement in Python is used for exception handling only. IV. The 'pyautogui' module in Python is commonly used for web scraping tasks. A DataFrame in Pandas is a two-dimensional, size-mutable, and potentially heterogeneous tabular data structure.		2*5=10 Marks CO1
	Suppose you working in a company where major task is to extract information from a web page, in such scenario write python code for performing following task (1) Parse HTML content (2) Extract and print different information about the title tag (3) Maximize window size and save the screenshot (4) Locate an element with the ID (5) Navigate to the Python.org website and Pause execution for 5 seconds. Write Python code for the same. OR In a company, you want to automate a task where you want to introduce following the functionality. Write python code for these functionality. <ul style="list-style-type: none">• Mouse Interactions:<ul style="list-style-type: none">◦ Simulate mouse actions: click, double click , right click, move to a location, move the mouse 300 pixel to the right of it's current position .◦ Get the current mouse position.◦ Drag and drop to a specific location.• Keyboard Interactions:<ul style="list-style-type: none">◦ Simulate key presses: press(), keyDown(), keyUp(), KeyLeft()◦ Type text using typewrite().◦ Simulate key combinations like ctrl + s, alt+del, and shift+x.		
10			1*15 = 15 Marks CO3

Roll No. _____

Pandit Deendayal Energy University

School of Technology

End Semester Examination
B. Tech. Computer Engineering
Semester – V

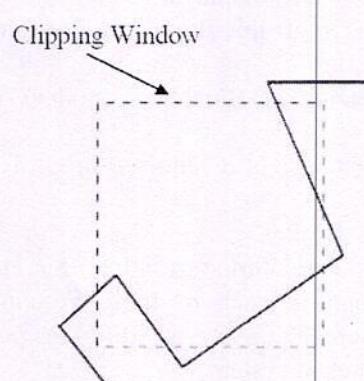
Course Name : Computer Graphics
Course Code : 23CP302T

Date: 07/12/2023
Time: 10:00 AM to 1:00 PM
Max. Marks: 100 marks

Instructions:

1. Do not write anything other than your roll number on question paper.
2. Assume suitable data wherever essential and mention it clearly.
3. Writing appropriate units, nomenclature, and drawing neat sketches/schematics wherever required is an integral part of the answer.

		Marks	CO
Q-1	<p>Answer the following questions (any five).</p> <p>(a) Differentiate raster and random scan displays. (b) State True/False and justify- “In all line drawing algorithms, brightness is independent of orientation of line”. (c) What do you mean by retracing? Define horizontal as well as vertical retracing. (d) What do you mean by interlacing? Is it required in CRT display used in computer? (e) Compare LED and LCD type display. (f) Consider raster system with the resolution of 640 x 480. How many pixels could be accessed per second in each of these systems by a display controller that refreshes the screen at a rate of 60 frames per second? What is the access time per pixel in each system?</p>	15	CO1
Q-2	<p>(a) Derive the equations of a circle using midpoint circle drawing algorithm with suitable diagram.</p> <p>OR</p> <p>(a) Derive the equations of a line using Bresenham line drawing algorithm with suitable diagram.</p> <p>(b) Consider the line coordinates (5, 5) and (11, 9). Rasterize the line segment using Bresenham line drawing algorithm.</p> <p>(c) Discuss any one inside-outside test for a polygon with an example.</p>	10 10 10 05	CO2
Q-3	<p>(a) Find the transformation matrix that converts a square with a diagonal [(3, 4), (8, 9)] to a unit square at the origin.</p> <p>OR</p> <p>(a) Consider a square with left bottom corner at (2, 2) and right top corner at (6, 6). Do the transformation which makes its size half while its center remains same. Find the new vertices.</p>	07 07	CO3

	(b) Derive a matrix of rotation of a given object about given point $P(x_1, y_1)$. Find out the rotation of the triangle ABC (A (2, 3), B (7, 5) and C (0, 0)) about A (2, 3). Consider the angle of rotation 90° anti-clockwise. (c) What is scaling transformation? Prove that two scaling transformations are commutative.	08 05	
Q-4	(a) Find the composite transformation matrix for mirror reflection of a 3D object with respect to the plane passing through the origin and having a normal vector whose direction is $N = I + J + K$. Make necessary assumptions. (b) Explain the types of Oblique projection.	10 04	CO4
Q-5	(a) Clip the line PQ having coordinates P(-2, 3) and Q(6, 5) against the clip window A(3, 0), B(1, 2), C(1, 4), D(3, 6), E(5, 4) and F(5, 2) using suitable line clipping algorithm. (b) Use the Sutherland – Hodgeman polygon clipping algorithm to clip the given polygon against the clipping window:	08 06	CO5
	 (c) Explain Bezier curves OR explain B-spline curves.	04	
Q-6	Answer the following questions (any Two). (a) List out basic illumination models. Explain any one basic illumination model. (b) Explain half tone techniques with an illustration. (c) Compare RGB and CMY color models.	08	CO6

Roll No. _____

Pandit Deendayal Energy University

End Semester Examination – (Nov-Dec, 2023)

B. Tech. (Computer Science and Engineering)

Semester - V

Date: 07/12/2023

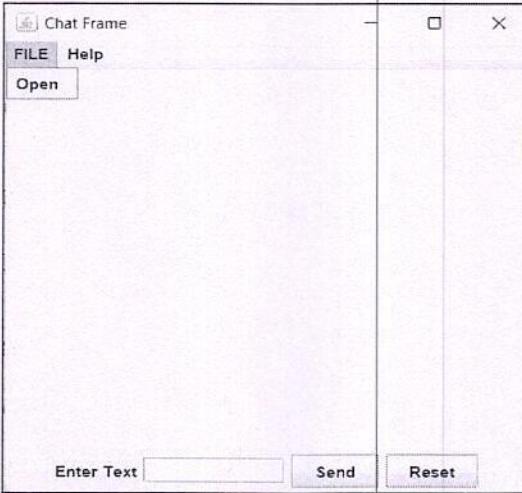
Time: 3 hours

Max. Marks: 100

Course Name: Advanced Java
Course Code: 23CP305T

Instructions:

1. Do not write anything other than your roll number on question paper.
2. Assume suitable data wherever essential and mention it clearly.
3. Writing appropriate units, nomenclature, and drawing neat sketches/schematics wherever required is an integral part of the answer.

Question No.	Description	Marks	Course Outcomes (CO's)
1	<p>For the outputs shown in figures 1 and 2, I have generated the codes mentioned in (a) and (b) respectively. But some places are vacant. Fill those blanks with the options pool given at the end of the question paper.</p> <p>(a)</p>  <p>Figure – 1</p> <pre>import javax.swing.*; import java.awt.*; class gui { public static void main(String args[]) { JFrame frame = new JFrame("____"); // Blank – 1 frame.setDefaultCloseOperation(JFrame.____); // Blank-2 frame.____(400, 400); // Blank – 3 } }</pre>	(07)	CO3

```

JmenuBar mb = new JmenuBar();
Jmenu m1 = new Jmenu("FILE");
Jmenu m2 = new Jmenu("Help");
mb.add(m1); mb.add(m2);
JMenuItem m11 = new JMenuItem("Open");
__.add(m11); //Blank - 4

Jpanel panel = new JPanel();
Jlabel label = new Jlabel("Enter Text");
JtextField tf = new JTextField(10);
Jbutton send = new JButton("Send");
Jbutton reset = new JButton("Reset");
panel.add(label); panel.add(tf);
panel.add(send);
panel.add(__); //Blank - 5

JtextArea ta = new JTextArea();
frame.getContentPane().add(BorderLayout.SOUTH, panel);
frame.getContentPane().add(BorderLayout.NORTH, mb);
frame.getContentPane().add(BorderLayout.CENTER, __); //Blank - 6
frame._____ (true); //Blank - 7
} }

```

(b)

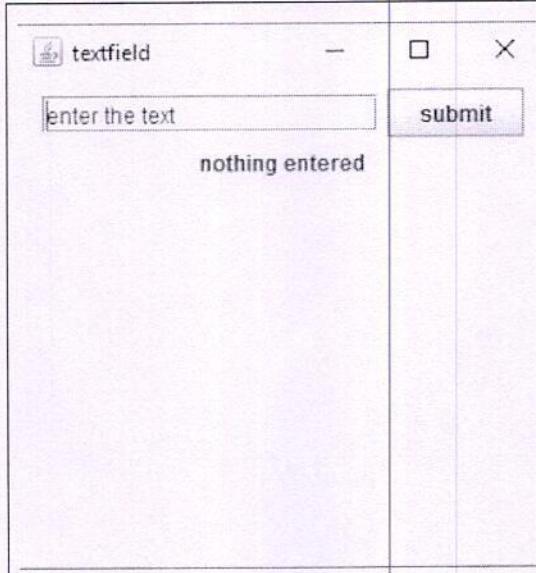


Figure - 2

```

import java.awt.event.*;
import javax.swing.*;
class text extends JFrame implements _____ { //Blank-8
    static JTextField t;
    static JFrame f;
    static JButton b;
}

```

(08)

CO3

	<pre> static JLabel l; public static void main(String[] args) { f = new JFrame("_____"); //Blank-9 l = new JLabel("nothing entered"); b = new JButton("submit"); text ____ = new text(); //Blank - 10 b.addActionListener(te); t = new JTextField("", 16); //Blank - 11 JPanel p = new JPanel(); p.add(t); p.add(b); p.add(l); f.add(____); //Blank - 12 f.setSize(300, 300); f.setVisible(____); //Blank - 13 } public void actionPerformed(____ e) //Blank - 14 { String s = e.____(); // Blank - 15 if(s.equals("submit")) { l.setText(t.getText()); t.setText(" "); } } } </pre>								
2	<p>What is MVC architecture? Explain with an example scenario. OR Explain Event Handling concept for GUI programming in Java</p>	(05)	CO1						
3	<p>Write an echo TCP server program that reads the lines from client and replies back them with the prefix “Server tells:”. For example, if client says “Hello”, then server will reply “Server tells: Hello”. The process will continue until the client sends “Bye”. Write both server and client program.</p> <p>OR Write an echo UDP Server and client program where client will send “Hello” message and in reply the server will provide current date and time.</p>	(20)	CO4						
4	<p>(a) What are the pros and cons of using Cookies for Session Handling. OR (a) Explain the difference between Servlet and JSP pages and discuss the scenarios for their appropriate usage.</p> <p>(b) Match the correct pairs.</p> <table border="1"> <tbody> <tr> <td>A. JSTL</td> <td>i. Runs only once</td> </tr> <tr> <td>B. Service process in Servlet</td> <td>ii. Multiple objects can share configuration information</td> </tr> <tr> <td>C. ServletConfig</td> <td>iii. Set init parameters for specific servlet</td> </tr> </tbody> </table>	A. JSTL	i. Runs only once	B. Service process in Servlet	ii. Multiple objects can share configuration information	C. ServletConfig	iii. Set init parameters for specific servlet	(05)	CO5
A. JSTL	i. Runs only once								
B. Service process in Servlet	ii. Multiple objects can share configuration information								
C. ServletConfig	iii. Set init parameters for specific servlet								

	<table border="1"> <tr> <td>D. ServletContext</td><td>iv. Set of Tags for JSP</td></tr> <tr> <td>E. Init method</td><td>v. doGET</td></tr> </table>	D. ServletContext	iv. Set of Tags for JSP	E. Init method	v. doGET		
D. ServletContext	iv. Set of Tags for JSP						
E. Init method	v. doGET						
	(c) State True/False : <ul style="list-style-type: none"> i. The servlet class is loaded when the first request for the servlet is received by the web container. ii. A new servlet instance is created everytime when a new user request comes. iii. Usage of web.xml is compulsory for developing a web app using servlets. (Provided that you are using tomcat version 8) iv. getSession() method is declared by HttpServletRequest Interface. v. doHead() is also a method in HttpServlet vi. <%@ ...> directive is used in JSP as scriptlet tag vii. In JSP, session is the implicit object to represent HttpSession viii. The full form of TLD file (created in the process for generating custom tags) is Tag Library Definition. ix. JSP Translator converts JSP into Servlet file x. getRequestDispatcher() method can be used to access a webpage from the Internet such as www.google.com. 	(10)	CO5				
	(d) Write a servlet and JSP program. The JSP Program will print the login form and redirect to servlet when user will press submit button. The Servlet Program will validate the user entry if username and password both are “admin”. <p style="text-align: center;">OR</p> Write a program to define a custom tag for printing date and time. Use this tag in a JSP file.	(10)	CO5				
5	Attempt any two from following: <ul style="list-style-type: none"> i. What is aspect oriented programming? Discuss the scenario where you will use it? ii. What are the advantages of Dependency Injection in Spring framework? iii. Give the full forms of JPA and ORM from perspective of Hibernate technology. Describe how hibernate technology is beneficial in comparison to traditional database connectivity program. 	(10)	CO6				
6	Find error from following code snippets and correct those errors (No need to write the full program). In case if no errors are there then provide the correct output. Each option carries 5 marks.	(20)	CO2				
	<p>(a) \\ Code snippet to insert a query in database using JDBC</p> <pre>String url = "jdbc:mysql://root@localhost:3306/Student"; String query = "insert into student1 values('Rohit',101, 'CS') "; Connection con = DriverManager.getConnection(url); Statement st = con.createStatement(); int m = st.executeQuery(query); if(m==1) System.out.println("inserted successfully : ");</pre>						

```

else
    System.out.println("insertion failed");
    st.delete();
    con.delete();
}

```

(b) \\ Code snippet for servlet to print the Hello World

```

public void doGet(HttpServletRequest req, HttpServletResponse res)
throws ServletException, IOException {

    response.setContentType("text/html");
    Printwriter out = response.getWriter();
    out.println("<h1> Hello World </h1>");
}

```

(c) \\ code snippet for JSP to evaluate some expressions and print the result.

```

<html>
<head>  <title>JSP expression tag example2</title> </head>
<body>
<%
int a=10,
int b=20,
int c=30;
%>
<% a+b+c %>
<%!= int i = 0; %>
<%
    i++;
    out.print("The value of i is now: " + i.toString());
%>
</body>
</html>

```

(d) \\ Code snippet of JSTL to print a pyramid

```

<%@taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c" %>
<html>
<body>
<h1>
<c:ForEach var="i" begin="1" end="10" step="2">
    <c:out value="${i}" />
</c:ForEach>
<br>
<%      int marks={10,12,15,14,9};
        session.setAttribute("marks",marks);
%>
<c:forEach var="mark" items="${marks}">
    <c:out value="${mark}" />
</c:forEach>
</h1>

```

	</body> </html>		
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Pool of Options for Question – 1 (a) and (b)

- | | | | |
|-----|---------------|-----|-------------------|
| 1. | EXIT_ON_CLOSE | 17. | ta |
| 2. | CLOSE_ON_EXIT | 18. | setVisible |
| 3. | setSize | 19. | getActionCommand |
| 4. | fixSize | 20. | ActionListener |
| 5. | setDimension | 21. | TextArea |
| 6. | m1 | 22. | viewActionCommand |
| 7. | showVisible | 23. | New Frame |
| 8. | m2 | 24. | te |
| 9. | ItemListener | 25. | frame |
| 10. | Textfield | 26. | p |
| 11. | tf | 27. | true |
| 12. | menu | 28. | enter the text |
| 13. | false | 29. | ActionEvent |
| 14. | mb | 30. | ItemEvent |
| 15. | reset | 31. | Chat Frame |
| 16. | Reset | 32. | Chat Window |