

Course Name: Software Engineering

Course Outcome

- CO1: Understand the basic concepts of software engineering.
- CO2: Apply software processes to solve real world problems.
- CO3: Estimate the cost, effort and schedule of software using COCOMO Model.
- CO4: Analyze the software design techniques (structure chart, SDM, sequence diagram).
- CO5: Understand the basic concepts of OO analysis and design.
- CO6: Develop the test cases to validate the software.
- CO7: Understand the basic models of software Quality and maintenance.

Printed Pages: 3

University Roll No.

Mid Term Examination, Odd Semester 2022-23 B.Tech, 2nd Year/3rd Year, 3rd Semester/5th Semester BCSC0009 – Software Engineering

Time: 2 Hours

Maximum Marks: 30

CSE, CCV, DA, AIML, CSF, IOT

Attempt All Questions: -

Section – A

Attempt All Questions

3 X 5 = 15 Marks

No.	Detail of Question	Marks	CO	BL	KL
1	Enlist the characteristics of Software. “Software Does not wear out but hardware does” explain the statement with the help of Bathtub curve	3	1	U	F
2	Which methodology is suitable for the projects where requirements are at a moderate to high risk of changing? Define the process of this model by explaining advantages and disadvantages with suitable diagram.	3	2	An	C
3	What are the crucial process steps of Requirement engineering? Discuss with the help of the Diagram	3	1	R	F
4	What is the Difference between Functional and non-Functional Requirements? Discuss four desirable characteristics of a good SRS document.	3	1	R	F
5	The owner of a Canteen feels that some amount of automation will help make his business more efficient. He also believes that an automated system might be an added attraction for the customers. So he wants to automate the operation of his businesses much as possible. Consider his case & construct the following A) Use Case Diagram B) Context Diagram	3	4	A	P

Section - B

Attempt All Questions

5 X 3 = 15 Marks

No.	Detail of Question	Marks	CO	BL	KL
6	A project is assigned to a software industry by a client. Which model should be used for software development under which requirements and solutions evolve through the collaborative effort of self-organizing and cross functional teams where team member's size must be 4-10 members with project leader and team members must have a meeting for 15-20 minutes on day to day basis. Define the process of this model by explaining all the components with suitable diagram.	5	2	An	P
7	Consider a project with the following functional units: Number of user inputs = 34 (Average complexity) Number of user outputs = 46 (low complexity) Number of inquiries = 10 (high complexity) Number of internal files = 06 (Average complexity) Number of external interfaces = 2 (Low complexity) In addition to this, the system requires significant data communication, and other complexity adjustment factors are treated as average. Compute the Unadjusted function point and Function Point of the project. The software is going to be implemented in C++ language so also calculate the size of the project.	5	3	A	P
8	A new project with estimated 200 KLOC embedded system has to be developed. Project manager has a choice of hiring from two pools of developers mentioned in below cases: Case1: Very highly capable (PCAP=0.70) with very little experience in the programming language (LEXP=1.14) being used or Case 2: Developers of low quality (PCAP=1.17) but a lot of with the programming language (LEXP=0.95). What is the impact of hiring all developers from one or the other pool?	5	3	A	P

Significance	Weighting factors		
	Low	Moderate	High
External Inputs (EI)	3	4	6
External Output (EO)	4	5	7
External Inquiries (EQ)	3	4	6
External logical files (ILF)	7	10	15
External Interface files (EIF)	5	7	10

Project	a ₁	b ₁	c ₁	d ₁
Organic	3.2	1.05	2.5	0.38
Semidetached	3.0	1.12	2.5	0.35
Embedded	2.8	1.20	2.5	0.32

Printed Pages: 11

University Roll No.....

Mid-Term Examination, Odd Semester 2022-23

B.Tech. CSE, II/III: Year, III/V: Semester

BCSE-0902: Smart Industrial Connectivity

Time: 1-Hour

Maximum Marks: 30

Note: Attempt all questions.

$60 \times 0.5 = 30$ Marks

1.) How many components does the RFID system consists of?

- a.) One
- b.) Two
- c.) Three
- d.) Four

2.) What is a different kind of radio frequency identification tags?

- a.) Active
- b.) Semi-Passive
- c.) Passive
- d.) All of the above

3.) Which tag doesn't have its own power supply?

- a.) Active
- b.) Semi-Passive
- c.) Passive
- d.) None of the above

4.) In which RFID tag, the range is less?

- a.) Active
- b.) Semi-Passive
- c.) Passive
- d.) None of the above

- 5.) How many components does the RFID reader consist of?
- a.)One
 - b.)Two
 - c.)Three
 - d.)Four
- 6.) In which frequency range does the RFID system operate?
- a.)High- Frequency
 - b.)Low-Frequency
 - c.)Ultra-frequency
 - d.)All of the above
- 7.) What is the range of RFID tags which is using the low frequency?
- a.)Upto 10 cm
 - b.)Upto 20 cm
 - c.)Upto 80cm
 - d.)Upto 60cm
- 8.) What is the range of RFID tags which is using the high frequency?
- a.)Upto 10 cm
 - b.)Upto 1 meter
 - c.)Upto 60 cm
 - d.)Upto 20 cm
- 9.) For high frequency and low frequency RFID tags the working principle is based on
- a.) Inductive Coupling
 - b.) Electromagnetic Coupling
 - c.) both a & b
 - d.) none
- 10.) For ultra-high frequency RFID tags the working principle is based on?
- a.) Inductive Coupling
 - b.) Electromagnetic Coupling

- c.) both a & b
- d.) none

11.) What are the strengths of RFID?

- a.) Advanced Technology
- b.) Small Size, easy to use
- c.) Has high Memory capacity
- d.) None

12.) What is the standard form of EPC?

- a.) Electronic Product Code
- b.) Electrical Product Code
- c.) Electronic Process code
- d.) None

13.) In which of the following line of sight is required?

- a.) RFID
- b.) Barcode
- c.) both a & b
- d.) None

14.) Which one of the following is reusable?

- a.) RFID
- b.) Barcode
- c.) both a & b
- d.) None

15.) Which one of the following is more expensive?

- a.) RFID
- b.) Barcode
- c.) both a & b
- d.) None

16.) Which RFID size is large?

- a.) Active

- b.) Passive
- c.) both a & b
- d.) None

17.) RFID lifetime is unlimited for?

- a.) Active
- b.) Passive
- c.) both a & b
- d.) None

18.) Which one of the following operates at higher frequencies?

- a.) Active
- b.) Passive
- c.) both a & b
- d.) None

19.) The required signal strength from tag to reader is high in RFID

- a.) Active
- b.) Passive
- c.) both a & b
- d.) None

20.) The required signal strength from reader to tag is low in RFID

- a.) Active
- b.) Passive
- c.) both a & b
- d.) None

21.) DHT11 is _____ sensor.

- a.) Proximity sensor
- b.) Humidity sensor
- c.) Touch sensor
- d.) Pressure sensor

22.) What is ESP8266?

- a.) Sensor
- b) WIFI module
- c) Board
- d) USB cable

23.) Units for Humidity sensor _____

- a) Dew/frost point or Relative Humidity
- b) Relative Humidity or Parts Per Million
- c) Dew/frost point or Parts Per Million
- d) Dew/frost point or Parts Per Million or Relative Humidity

24.) Units for Absolute Humidity is _____

- a) grams/m³
- b) % by volume
- c) PPMV
- d) %

25.) Units for Dew point is _____

- a) gram/m³
- b) % by volume
- c) PPMV
- d) °C

26.) Humidity sensors are divided into how many types and depending on what?

- a) 2 types depending on output
- b) 2 types depending on measurement units
- c) 3 types depending on measurement units
- d) 3 types depending on output

27.) Electronic type hygrometers are divided into how many types?

- a) 5 types
- b) 3 types
- c) 4 types
- d) 2 types

- 28.) Relative humidity is a function of _____
- a) Ambient temperature
 - b) Water vapor pressure
 - c) Ambient temperature and Water vapor pressure
 - d) Dryness
- 29.) Which sensors measure the moisture level using humidity?
- a) Capacitive Sensor
 - b) Resistive Sensor
 - c) Thermal Conductivity
 - d) Both resistive and conductive
- 30.) _____ sensors measure the electrical change in devices such as conductive polymers.
- a) Capacitive Sensor
 - b) Resistive Sensor
 - c) Thermal Conductivity
 - d) Both resistive and conductive
- 31). _____ sensors are suitable for environments that have high temperatures.
- a) Capacitive Sensor
 - b) Resistive Sensor
 - c) Thermal Conductivity
 - d) Both resistive and conductive
- 32). Are capacitive sensors linear?
- a) True
 - b) False
- 33.) Capacitive RH sensors dominate _____ measurements.
- a) Atmospheric
 - b) Process

- c) Both atmospheric and process
- d) Neither atmospheric nor process

34.) What is humidity sensor?

- a) Hygrometer
- b) Gyroscope
- c) Sesimoscope
- d) Sundial

35.) Which sensor can detect nearby objects?

- a) Proximity sensor
- b) Humidity sensor
- c) Touch sensor
- d) Pressure sensor

36.) The monitoring of machines, gears and objects are achieved by which sensor?

- a) Humidity sensor
- b) Proximity sensor
- c) Touch sensor
- d) Pressure sensor

37.) Which proximity sensor detects metal objects?

- a) Capacitive Proximity Sensor
- b) Magnetic Proximity Sensor
- c) Ultrasonic Proximity Sensor
- d) Inductive Proximity Sensor

38.) Which proximity sensor indicates level?

- a) Inductive Proximity Sensor
- b) Capacitive Proximity Sensor
- c) Magnetic Proximity Sensor
- d) Ultrasonic Proximity Sensor

39.) Which proximity sensors are used in automotive?

- a) Inductive Proximity Sensor
- b) Capacitive Proximity Sensor
- c) Magnetic Proximity Sensor
- d) Ultrasonic Proximity Sensor

40.) Are proximity sensors used in retail settings?

- a) True
- b) False

41.) What is the main programming language code developed by eclipse?

- a) C
- b) JAVA
- c) C++
- d) C/C++

42.) What does an Eclipse IDE allow?

- a) Editing the program
- b) Compiling the program
- c) Both editing and compiling
- d) Editing, building, Debugging, Compiler

43.) What is the scenario the IDE generally required?

- a) Language support
- b) Visual programming
- c) Attitude across different platforms
- d) Out system platform

44.) What is Eclipse?

- a) IDE
- b) Software
- c) GNU
- d) Code base

45.) Eclipse is used to develop documents with LaTeX.

- a) True
- b) False

46.) Does Raspberry Pi need external hardware?

- a) True
- b) False

47.) Does RPi have an internal memory?

- a) True
- b) False

48.) What do we use to connect TV to RPi?

- a) Male HDMI
- b) Female HDMI
- c) Male HDMI and Adapter
- d) Female HDMI and Adapter

49.) How power supply is done to RPi?

- a) USB connection
- b) Internal battery
- c) Charger
- d) Adapter

50.) What is the Ethernet/LAN cable used in RPi?

- a) Cat5
- b) Cat5e
- c) Cat6
- d) RJ45

51.) What are the parameters that are default values?

- a) Port_Name and Bits
- b) Speed and Port_Names
- c) Speed and Parity
- d) Stop bit and Flow Control

52.) What is the command used for easy using of GNU screen?

- a) \$useradd -G {dialout} your_name
 - b) Screen Port_Name115200
 - c) Minicom -b 115200 -o -D Port_Name
 - d) Prompt> # help
- 53.)** Which instruction set architecture is used in Raspberry Pi?
- a) X86
 - b) MSP
 - c) AVR
 - d) ARM
- 54.)** What is the default user in Debain on Raspberry Pi?
- a) Default
 - b) User
 - c) Pi
 - d) Root
- 55.)** What are the distributions supported by raspberry Pi?
- a) Arch Linux
 - b) Debain
 - c) Fedora Remix
 - d) Arch Linux, Debain, and Fedora Remix
- 56.)** What bit processor is used in Pi 3?
- a) 64-bit
 - b) 32-bit
 - c) 128-bit
 - d) Both 64 and 32 bit
- 57.)** What is the speed of operation in Pi 3?
- a) 900MHz
 - b) 1.2GHz
 - c) 1GHz
 - d) 500MHz
- 58.)** WiFi is not present in which of the following models?

- a) Raspberry Pi3
- b) Raspberry Pi Zero WH
- c) Raspberry Pi Zero W
- d) Raspberry Pi Zero

59.) Does micro-SD card present in all modules?

- a) True
- b) False

60.) How many USB ports are present in Raspberry Pi 3?

- a) 5
- b) 2
- c) 4
- d) 3

Course Name: Object-Oriented Programming

Course Outcome

- CO1: Understand the concepts of OOPS and Java.
- CO2: Implement various methods of Input.
- CO3: Implement Scope of variable and access specifiers
- CO4: Understand String and StringBuffer
- CO4: Implement Inheritance and Constructors.
- CO5: Implement Polymorphism and Packages.

Printed Pages:2

University Roll No.

Mid Term Examination, Odd Semester 2022-23

B.Tech (CSE/CCV/DA/IIOT/AIML/CSF), 2ND Year, 3RD Semester

BCSC1002: Object-Oriented Programming

Time: 2 Hours

Maximum Marks: 30

Instruction for students:

1. Read question carefully.
2. Don't Overwrite
3. Write the complete code in one place neatly
4. Maintain appropriate indentation while writing code in java if needed.
5. Commenting code is optional.

Section – A

Attempt All Questions

3 X 5 = 15 Marks

No.	Detail of Question	Marks	CO	BL	KL
1	a) Explain in brief functions of JVM, JDK and JRE. b) Write short note on: i) Class ii) Object iii) Methods	1.5 1.5	CO1	U	C
2	a) Create a class to read student data having instance variables rollno, name, course, marks using Scanner. b) Write the code to print sum, multiply, divide and difference of two number's using command line input.	1.5 1.5	CO2	E	C
3	a) Differentiate between mutable and Immutable Object. Give the suitable example. b) Differentiate between static variables and instance variables. Give the suitable code.	1.5 1.5	CO4	R	P
4	a) Explain public, private, default and protected access specifiers. Give the suitable example. b) What is the usage of super keyword with variable and method with suitable example?	1.5 1.5	CO3	U	C
5	a) Define Inheritance? Discuss types of inheritance in detail. Explain with example. b) How can you convert variable value to be constant? Give suitable example.	1.5 1.5	CO5	A	C

Section – B

Attempt All Questions

5 X 3 = 15 Marks

No.	Detail of Question	Marks	CO	BL	KL
6	What are the various features of Java? Discuss in detail.	5	CO1	U	M
7	a) What do you mean by method overloading? How it is different from method overriding? Give the suitable code. b) Define packages. Explain types of packages. Write the code to create, implement and run package.	2.5 2.5	CO5	R	P
8	a) Write a program to print the area of a rectangle by creating a class named 'Area' taking the values of its length and breadth as parameters of its constructor and having a method named 'returnArea' which returns the area of the rectangle. b) Create a class named 'Shape' with a method to print "This is This is shape". Then create two other classes named 'Rectangle', 'Circle' inheriting the Shape class, both having a method to print "This is rectangular shape" and "This is circular shape" respectively. Create a subclass 'Square' of 'Rectangle' having a method to print "Square is a rectangle". Now call the method of 'Shape' and 'Rectangle' class by the object of 'Square' class.	2.5 2.5	CO5	An	F

Course Name: Computer Organization

Course Outcome

CO1: Understand the organization of the modern computer system hardware.

CO2: Analyze the performance of component, able to calculate the effective address of different operands, arithmetic operations of positive and negative numbers.

CO3: Understand the Basic hardware architectural issues that affect the nature and performance of software.

Printed Pages:

University Roll No.

Mid Term Examination, Odd Semester 2022-23

B.Tech (CS-All, AIML, CCV, CSF, DA, IIoT), II year, III Semester
Subject Code & Subject Name- Computer Organization (BCSC 1005)

Time: 2 Hours

Maximum Marks: 30

Section – A

Attempt All Questions

3 X 5 = 15 Marks

No.	Detail of Question	Marks	CO	BL	KL
1	Explain Von Neumann architecture with proper illustration.	3	I	U	C
2	Perform following arithmetic operations using 2's complement. Also, check the existence of overflow in each operation. Assume 8-bit representation. (a) $(-10) - (+15)$ (b) $(-6) + (-8)$	3	2	A	P
3	Represent $(-650.22)_{10}$ in IEEE single precision and double precision format.	3	2	A	P
4	A digital Computer has common bus system for 32 register of 64 bits each. Determine (a) Number of multiplexers (b) Size of each multiplexer (b) Number of selection lines	3	3	U	C
5	Convert the following arithmetic expressions from infix to reverse polish notation. (a) $A + B * [C * D + E * (F + G)]$	3	3	A	P

$$(b) \frac{A * [B + C * (D + E)]}{F * (G + H)}$$

Section - B

Attempt All Questions

5 X 3 = 15 Marks

No.	Detail of Question	Marks	CO	BL	KL
6	Perform binary multiplication of $(-24) \times (-19)$ using Booth's Algorithm. Show systematic multiplication process.	5	2	A	P
7	The 8-bit registers AR, BR, CR, and DR initially have the following values $AR=10010011; BR=10000111;$ $CR=11001101; DR=11110011$ Determine the 8-bit values in each register after the execution of the following sequence of microoperations $AR \leftarrow AR \vee BR$ $BR \leftarrow \overline{BR}$ $CR \leftarrow CR - 1$ $DR \leftarrow AR + \overline{BR} + 1$ $BR \leftarrow \text{cpl } BR$	5	3	U	C
8	Convert the following arithmetic expressions in to reverse polish notation and show the stack operations for evaluating the numerical result $(3+4)*[10*(2+6)+8]+(9*1+3)$	5	3	A	P

Course Name:

Course Outcome

- CO1- Understand the classification of operating system environment.
- CO2- Understand the basic of process management.
- CO3- Apply the concept of CPU process scheduling for the given scenarios.
- CO4- Illustrate the process synchronization and concurrency process in operating system.
- CO5- Analyze the occurrence of deadlock in operating system.
- CO6- Describe and analyze the memory management and its allocation policies.
- CO7- Understand the concepts of disk scheduling

Printed Pages:

University Roll No.

Mid Term Examination, Even Semester 2022-23

B. Tech. (CSE), II Year, III Semester

Operating Systems (BCSC0004)

Maximum Marks: 30

Time: 2 Hours

Instruction for students:

Section - A

3 X 5 = 15 Marks

No.	Detail of Question	Marks	CO	BL	KL																		
1	<p>Consider the following set of processes that need to be scheduled on a single CPU. All the times are given in milliseconds.</p> <table border="1"> <thead> <tr> <th>Process Name</th><th>Execution Time</th><th>Arrival Time</th></tr> </thead> <tbody> <tr> <td>P1</td><td>6</td><td>0</td></tr> <tr> <td>P2</td><td>3</td><td>1</td></tr> <tr> <td>P3</td><td>1</td><td>2</td></tr> <tr> <td>P4</td><td>2</td><td>3</td></tr> <tr> <td>P5</td><td>1</td><td>5</td></tr> </tbody> </table> <p>Calculate the average process turnaround time (in msec) using the shortest Remaining Time First (SRTF) CPU scheduling algorithm?</p>	Process Name	Execution Time	Arrival Time	P1	6	0	P2	3	1	P3	1	2	P4	2	3	P5	1	5	3	3	A	P
Process Name	Execution Time	Arrival Time																					
P1	6	0																					
P2	3	1																					
P3	1	2																					
P4	2	3																					
P5	1	5																					
2	Explain and describe Peterson's Solution for Process synchronization. How it satisfies all conditions of process synchronization?	3	4	E	M																		
3	Why Operating system called Resource Manager? Discriminate Micro and monolithic kernel on basic of structure, size and speed.	3	1	R, U	F																		
4	Differentiate between Multiprogramming, Multitasking and Multiprocessing.	3	1	An	C																		
5	Which scheduler decide the degree of multiprogramming? Explain Mid-term scheduler with diagram.	3	2	U	M																		

Section – B**5 X 3 = 15 Marks**

No.	Detail of Question	Marks	CO	BL	KL															
1	What is the purpose of System Call? Discuss the solution of Producer and Consumer problem with shared memory.	5	2	U	F															
2	What are various process state? Explain and draw 7-State diagram. In what conditions process changes from running to ready state directly.	5	4	U, A	C															
3	The following snapshot of the processes are mentioned with no I/O activities. Calculate Turnaround Time, Waiting Time and Response Time for all processes for Round Robin CPU Scheduling Algorithm. <table border="1"><thead><tr><th>Process</th><th>Arrival time</th><th>Burst Time</th></tr></thead><tbody><tr><td>P0</td><td>0</td><td>5</td></tr><tr><td>P1</td><td>2</td><td>3</td></tr><tr><td>P2</td><td>5</td><td>4</td></tr><tr><td>P3</td><td>9</td><td>8</td></tr></tbody></table> Time Slice= 2	Process	Arrival time	Burst Time	P0	0	5	P1	2	3	P2	5	4	P3	9	8	5	3	A	P
Process	Arrival time	Burst Time																		
P0	0	5																		
P1	2	3																		
P2	5	4																		
P3	9	8																		

Course Name: Computer Networks

Course Outcome

- CO1: Understand the concept of OSI and TCP/IP reference model
- CO2: Understand the basics of data transmission at physical layer.
- CO3: Understand the channel allocation using ALOHA, CSMA and CSMA/CD.
- CO4: Apply error detection and correction technique to eliminate transmission error.
- CO5: Analyze the fixed and variable length address (IPv4) subnetting for the given scenarios.
- CO6: Understand the design issues of the transport layer.
- CO7: Understand the mechanism of protocols at application layer such as FTP, HTTP, Telnet, DNS.
- CO8: Understand IPv6 addressing and differentiate it from IPv4.

Printed Pages: 03

University Roll No.

Mid Term Examination, Odd Semester 2022-23

B.Tech. (CSE/AIML/CCV/DA/CSF/IOT), 2nd Year, III Semester
Subject Code & Subject Name- BCSC0008 Computer Networks

Maximum Marks: 30

Time: 2 Hours

Instruction for students:

Section – A

3 X 5 = 15 Marks

Attempt All Questions

No.	Detail of Question	Marks	CO	BL	KL
1	What do you understand by the term topology in network? Discuss any three topology.	3	2	R	F
2	What is the vulnerable time of Pure ALOHA? We have a pure ALOHA network with 100 stations. If $T_{fr} = 1\mu s$, what is the number of frames/s each station can send to achieve the maximum efficiency. OR A 1-Gbps Ethernet with a single store-and-forward switch in the path, and a packet size of 5,000 bits. Assume that each link introduces a propagation delay of 10 μs and that the switch begins retransmitting immediately after it has finished receiving the packet. What is the total transfer delay?	3	3	A	P
3	How Manchester Line Coding Scheme is differing from Differential Manchester Line Coding Scheme. Consider a bit stream 1011011 and draw the Manchester and Differential Manchester Coding?	3	2	An	C
4	What is the need of OSI reference model? Explain the role of Data Link Layer and Physical Layer.	3	1	R	F
5	Explain the different transmission impairments that affect data communications.	3	2	R	F

Section – B

Attempt All Questions

5 X 3 = 15 Marks

No.	Detail of Question	Marks	CO	BL	KL																		
6	<p>A network has a data transmission bandwidth of 20×10^6 bits per second. It uses CSMA/CD in the MAC layer. The maximum signal propagation time from one node to another node is 40 microseconds. What is the minimum size of a frame in the network in byte?</p>	5	3	A	P																		
7	<p>Five equal-size datagrams belonging to the same message leave for the destination one after another. However, they travel through different paths as shown in the following table</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Datagram</th> <th>Path Length</th> <th>Visited Switches</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>3200 Km</td> <td>1,3,5</td> </tr> <tr> <td>2</td> <td>11,700 Km</td> <td>1,2,5</td> </tr> <tr> <td>3</td> <td>12,200 Km</td> <td>1,2,3,5</td> </tr> <tr> <td>4</td> <td>10,200 Km</td> <td>1,4,5</td> </tr> <tr> <td>5</td> <td>10,700 Km</td> <td>1,4,3,5</td> </tr> </tbody> </table> <p>We assume that the delay for each switch (including waiting and processing) is 3, 10, 20, 7, and 20 ms respectively. Assuming that the propagation speed is 2×10^8 m/s, find the order the datagrams arrive at the destination and the delay for each. Ignore any other delays in transmission.</p> <p style="text-align: center;">OR</p> <p>Suppose a 128-Kbps point-to-point link is set up between Earth and a rover on Mars. The distance from Earth to Mars (when they are closest together) is approximately 55 gigametre, and data travels over the link at the speed of light—3×10^8 m/sec.</p> <p>(a) Calculate the minimum RTT for the link.</p> <p>(b) Calculate the delay × bandwidth product for the link.</p> <p>(c) A camera on the rover takes pictures of its surroundings and sends these to Earth. How quickly after a picture is taken can it reach Mission Control on Earth? Assume that each image is 5 MB in size.</p>	Datagram	Path Length	Visited Switches	1	3200 Km	1,3,5	2	11,700 Km	1,2,5	3	12,200 Km	1,2,3,5	4	10,200 Km	1,4,5	5	10,700 Km	1,4,3,5	5	2	An	C
Datagram	Path Length	Visited Switches																					
1	3200 Km	1,3,5																					
2	11,700 Km	1,2,5																					
3	12,200 Km	1,2,3,5																					
4	10,200 Km	1,4,5																					
5	10,700 Km	1,4,3,5																					

	Explain Cyclic Redundancy Check (CRC). Why this technique is very popular? A bit stream 1101011011 is transmitted using the standard CRC method. The generator polynomial is x^4+x+1 . What is the actual bit string transmitted?				
8	<p style="text-align: center;">OR</p> <p>Sixteen-bit messages are transmitted using a Hamming code. How many check bits are needed to ensure that the receiver can detect and correct single-bit errors? Show the bit pattern transmitted for the message 1101001100110101. Assume that even parity is used in the Hamming code.</p>	5	4	A	M

CO – Course Outcome, BL – Abbreviation for Bloom's Taxonomy Level (R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, C-Create), KL – Abbreviation for Knowledge Level (F-Factual, C-Conceptual, P-Procedural, M-Metacognitive). However, For Engg. Courses in addition to F, C, P & M include D-Fundamental Design Principles, S-Criteria and Specifications, PC-Practical Constraints, DI-Design Instrumentalities

Course Outcome

- CO1: Understand the notion of mathematical thinking and proofs to solve the problem.
- CO2: Apply the basics of discrete probability and number theory to solve the real-world problem.
- CO3: Analyze basic discrete structures and algorithms using effectively algebraic techniques.
- CO4: Analyze mathematical concepts like sets, reasoning, relational algebra and graph theory to solve optimization problems.
- CO5: Analyze the validity of an argument using logical notation.
- CO6: Demonstrate the basic structures of proof techniques to write and evaluate the validity of arguments.
- CO7: Understand the basic principles of sets, set equalities and operations in sets.
- CO8: Apply counting principles to determine probabilities.

Printed Pages:02

University Roll No.

Mid Term Examination, Odd Semester 2022-23 B.Tech. (CSE/CCV/DA/CSF/IIT), II/III Yr. III / V Sem Discrete Mathematics (BCSC 1010)

Time: 2 Hrs. s

Maximum Marks: 30

Instruction for students:

1. All parts of a question should be answered at one place.
2. Answer should be brief and to-the-point and be supplemented with neat sketches.
3. Any missing or wrong data may be assumed suitably giving proper justification.
4. Figures on the right-hand side margin indicate full marks.

Section - A

Attempt All Questions

3 X 5 = 15 Marks

No.	Detail of Question	Marks	CO	BL	KL
1	For given set of integers in range [1 to 140], use Principle of Inclusion-Exclusion for determining the number of elements which are NOT divisible by 2, 5 or 7.	3	1	U	C
2	Show that: $A - (B \cup C) = (A - B) \cap (A - C)$	3	4	An	F
3	If R be a relation in the set of integers Z defined by $R = \{(x, y) : x \in Z, y \in Z, (x - y) \text{ is divisible by } 5\}$ Show that it is an equivalence relation.	3	7	A	iM
4	Define Domain, Co-domain, Range in Function? Consider functions: f, g and h on $X = \{1, 2, 3\}$ as: $f = \{(1, 2), (2, 3), (3, 1)\}$ $g = \{(1, 2), (2, 1), (3, 3)\}$ $h = \{(1, 1), (2, 2), (3, 1)\}$ Compute Function Composition: $f \circ g$, $g \circ f$, $f \circ g \circ h$?	3	6	R	C
5	Solve the following recurrence relations using characteristic root method: $a_n - 8a_{n-1} + 21a_{n-2} - 18a_{n-3} = 0$	3	3	E	P

Section - B

Attempt All Questions

5 X 3 = 15 Marks

No.	Detail of Question	Marks	CO	BL	KL
6	Prove using mathematical induction that for all $n \geq 1$, $1 + 4 + 7 + \dots + (3n - 2) = \frac{n(3n - 1)}{2}$	5	3	An	C
7	Solve the following recurrence relations using generating functions: $a_r - 4a_{r-1} + 4a_{r-2} = 0, \quad r \geq 2, \quad a_0 = 1,$ $a_1 = 6$	5	1	E	P
8	(a) Discuss the Pigeonhole Principle? (b) Determine the minimum number of card selected from a standard deck of 52 cards to guarantee that at least three cards of the same suit(shape)? (c) The Indian Cricket team consists of 16 players. It includes 2 wicketkeepers and 5 bowlers. In how many ways, can you select a cricket team of 11 players if you have to select 1 wicketkeeper and at least 4 bowlers ?	5	2	U	F

Course Name: ENGINEERING MATHEMATICS III**Course Outcomes:**

- CO1- Compute the coefficient of correlation and regression between two variables
 CO2- Apply Chi-square test and probability distributions
 CO3- Use Laplace transform in solving differential equations
 CO4- Know the concept of analytic functions and its applications in engineering
 CO5- Understand bilinear transformation and its applications
 CO6- Use Cauchy's residue theorem in solving real integrals

Printed Pages: 03

University Roll No.

Mid Term Examination, Odd Semester 2022-23**B.Tech. II Year, III Semester****BMAS 1103, ENGINEERING MATHEMATICS III****Time: 2 Hours****Maximum Marks: 30**

Instruction for students:

*Attempt Both Sections.***Section - A***Attempt All Questions* **$3 \times 5 = 15$ Marks**

No.	Detail of Question	Marks	CO	BL	KL										
1	If P is the pull required to lift a load W by means of a pulley block, find a linear law of the form $P = mW + c$ connecting P and W, using the following data: <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>W</td><td>50</td><td>70</td><td>100</td><td>120</td></tr> <tr> <td>P</td><td>12</td><td>15</td><td>21</td><td>25</td></tr> </table> where P and W are taken in kg-wt. and m, c are constants.	W	50	70	100	120	P	12	15	21	25	3	1	A	C
W	50	70	100	120											
P	12	15	21	25											
2	Four persons in a group of 20 persons are graduates. If 4 persons are selected at random from 20, find the probability that (i) all are graduates (ii) at least one is a graduate.	3	2	An	C										
3	If a random variable has a Poisson distribution such that $P(1) = P(2)$, find (i) mean of the distribution (ii) variance of the distribution (iii) $P(4)$	3	2	An	F										

4	Evaluate: $L \left[\frac{e^{-2t} - e^{-4t}}{t} \right]$ where L is Laplace transform operator.	3	3	E	P
5	Find Laplace transform of the function $F(t) = e^{2t}(3 \sin 2t - 2 \cos 2t)$	3	3	R	P

Section – B

Attempt All Questions

5 X 3 = 15 Marks

No.	Detail of Question	Marks	CO	BL	KL																						
6	<p>Two judges A and B in a music competition ranked the 10 entries as follows:</p> <table border="1"> <tr> <td>Rank by Judge A</td> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td> </tr> <tr> <td>Rank by Judge B</td> <td>6</td><td>9</td><td>1</td><td>10</td><td>3</td><td>5</td><td>4</td><td>7</td><td>8</td><td>2</td> </tr> </table> <p>Use the rank correlation coefficient to measure the degree of agreement between the judgement of these two judges.</p>	Rank by Judge A	1	2	3	4	5	6	7	8	9	10	Rank by Judge B	6	9	1	10	3	5	4	7	8	2	5	1	An	C
Rank by Judge A	1	2	3	4	5	6	7	8	9	10																	
Rank by Judge B	6	9	1	10	3	5	4	7	8	2																	
7	<p>From the given data, construct the equation of lines of regression of y on x and x on y. Also calculate the correlation coefficient.</p> <table border="1"> <tr> <td>x</td> <td>2</td> <td>4</td> <td>6</td> <td>8</td> <td>10</td> </tr> <tr> <td>y</td> <td>5</td> <td>7</td> <td>9</td> <td>8</td> <td>11</td> </tr> </table>	x	2	4	6	8	10	y	5	7	9	8	11	5	1	U	M										
x	2	4	6	8	10																						
y	5	7	9	8	11																						

Determine whether there is any association between income level and type of schooling:

Income	Public School	Govt. School
Low	200	400
High	1000	400

It is given that the tabulated value of χ^2 at 5% level of significance for 1 degree of freedom is 3.841.

OR,

A chemical extraction plant processes sea water to collect sodium chloride and magnesium. It is known that the sea water contains sodium chloride, magnesium and other elements in the ratio 62: 4: 34. A sample of 200 tonnes of sea water has resulted in 130 tonnes of sodium chloride and 6 tonnes of magnesium. Are these data consistent with the known composition of sea water at 5% level of significance?

It is given that the tabular value of χ^2 at 5% level of significance for 2 degrees of freedom is 5.991.

5

2

A

C

Course Name: English for Professional Purposes BELH0003

Course Outcomes

CO1-The topics dealing with communication aspects will train the students hands on, by enabling them understand/identify and appreciate the barriers to communication, ways to overcome, process & type of communication etc.

CO2-The students will be able to understand the needs & requirements of the target audience based on their exposure and knowledge of the subject and will be able to communicate accordingly with certain level of accuracy.

CO3-The writing skills of the students will be enhanced to such an extent that they could easily prepare and manage materials and strategies of formal correspondence themselves.

CO4-The students will be equipped with interpersonal skills through group presentations, skits and role-playing exercises. The exercises will help in getting rid of stage-fear, nervousness and hesitation during deliveries of official nature.

CO5-The students will be able to identify and rectify grammatical errors in written communication.

Printed Pages: **University Roll No.**

Mid Term Examination, Odd Semester 2022-23

B.Tech. & Biotech (Common to all branches), II Year, III Semester

Subject Code & Subject Name- BELH0003_English for Professional Purposes

Time: 2 Hours

Maximum Marks: 30

Instruction for students:

1. Answers to the questions **MUST** be as per the instructions given and in the given order of the questions, Sec. A 1-2-3..., Sec. B. 1-2-3..., Sec C. 1-2-3.... Otherwise marks will be deducted.
2. For multiple choice questions, write **only question number and the correct option number, not the word(s).**

Section – A

Attempt All Questions

3 X 5 = 15 Marks

No.	Detail of Question	Marks	CO	BL	KL
1	Discuss any three innovative ways of introducing a topic in a presentation.	3	01	U	C
2	Explain the process of communication with the help of a diagram.	3	01	R	P
3	Prepare a set of 6 PowerPoint slides on your answer book on any topic of your choice, as per the following details: Slide No. Content 1 Topic slide 2 Introductory slide 3-5 Main body 6 Conclusion	3	04	C	P
4	“Verbal and non verbal communication go hand in hand.” Explain	3	01	U	C
5	Discuss levels of communication in detail.	3	01	R	C

Section – B

Attempt All Questions

5 X 3 = 15 Marks

No.	Detail of Question	Marks	CO	BL	KL
	Choose the correct answer-				
i.	My sister always makes me _____ her room on Sunday morning. a. to clean up b. clean up c. cleaning up d. both a and b e. cleaned up				
ii.	Instead of buying a new car, why don't you _____ your old one ____? a. has, to fix b. was, fixing c. have, fixed d. have, fixes e. have, fix				
iii.	Don't _____ the maintenance cost ____ Rs. 1 Lakh. a. let , surpassed b. let, to surpass c. let, surpass d. let, surpassing e. to let, surpass	5	05	U	C,F
iv.	The queen received her first pearl necklace from her father King George VI in the form of three-stranded chains. a. Active b. Passive c. Causative d. Causative-passive e. None of the above				

- v. Two elephants from the Satpura Tiger Reserve in Narmadapuram have been brought in to take charge of the security and safety of the eight cheetahs from Namibia.
- a. Active
 - b. Passive
 - c. Causative
 - d. Causative-passive
 - e. None of the above

Rewrite the following sentences using the given verb as causative-

- vi. I dyed my hair. (get)
- a. My hair got dye.
 - b. I got dye for my hair.
 - c. I got the barber dye my hair.
 - d. I got my hair dyed.
 - e. My hair got dyed by the barber.
- vii. My friend edited the article. (have)
- a. My friend has his secretary edited the article.
 - b. My friend had his secretary edit the article.
 - c. The article had been edited by my friend.
 - d. My friend had his article edit.
 - e. The secretary had the article to edited.
- viii. Identify the sentence where verb 'make' is used as a causative.
- a. The architect used all his knowledge to make the exterior of the building impressive.

- b. My mother made a beautiful garland to offer the deity.
- c. The watch of this make is not easily available.
- d. Mr. Sharma made his daughter opt for engineering course.
- e. The Channel has broadcasted the making of 'Mahatma' movie.
- ix. Congress leader and Lok Sabha MP Shashi Tharoor, popular among youngsters, received appreciation for the role he played in getting the examinations _____ in Kerala Universities.
- a. postponed
- b. postpone
- c. be postponed
- d. being postponed
- e. been postpone
- x. Which of the sentences between (a) and (e) is the causative form of the following sentence:
- We hired a professional to paint our house.
- a. We could get professional painter for the house.
- b. We had professional painted the house.
- c. We have the house paint by a professional painter.
- d. We had the house painted by a professional painter.
- e. We had the house paint.

Choose the correct answer-

i. Only _____ employees knew how important the project was.

- a. a few
- b. some few
- c. few
- d. some
- e. a and d both

ii. _____ of those was/were able to come up with a solution.

- a. few
- b. none
- c. much
- d. little
- e. the little

iii. This team needs to win _____ trophies and medals in order to be regarded as the best team of the event.

7

5

05

U

C,F

- a. some
- b. much
- c. a large amount of
- d. a lot of
- e. a great deal of

iv. The interviewer asked me _____ questions every _____ minutes.

- a. several/many
- b. less/a few
- c. the number of/other
- d. many/ one another
- e. a number of/few

v. The event started at ____ noon and didn't finish until late in ____ evening.

- a. the/the
- b. no article/ no article

- c. no article/the
d. the/an
e. the/no article
- vi. Though Meetakshi has ___ knowledge about the subject she passed the examination.
- a. few
b. little
c. enough
d. a lot of
e. lots of

In each of the questions given below, there are two segments labelled as (P) and (Q). Mark your answer as per the letter codes provided below:

- a. Both P and Q are correct.
- b. Both P and Q are incorrect.
- c. P is correct but Q is incorrect.
- d. P is incorrect but Q is correct.
- e. None of the above

vii. (P): the first two hours (Q): the two first hours

viii.(P): enough book (Q): any book

Some parts in the following sentences have errors and some are correct. Find out which part has an error and mark that part as your answer. If there is no error, mark 'No error' as your answer.

ix. Aryan wrote (a)/much of his poems (b)/ when he (c)/ was young(d)/ NO ERROR (d)

x. I will (a)/ not have (b)/ some answers (c)/ for

	your questions. (d)/ NO ERROR.(e).				
8	<p>8.1 What is the significance of 'turn taking' for an effective and successful communication?</p> <p>8.2. Do as directed-</p> <p>i. Change the narration of the following.</p> <p>Arun said, "This is the right time to visit Mussoorie."</p> <p>(a) Arun says that it is the right time to visit Mussoorie.</p> <p>(b) Arun said that that was the right time to visit Mussoorie .</p> <p>(c) Arun said, it is the right time to visit Mussoorie.</p> <p>(d) Arun said that is the right time to visit Mussoorie.</p> <p>In each of the sentences given below, a word is given in bold and <i>italic</i> style. Identify its part of speech.</p> <p>ii. He gave a lecture on crop and animal husbandry.</p> <p>A. Adverb B. Preposition C. Adjective D. Conjunction. E. Noun</p> <p>iii. I'll have to stop you there, we've run out of time.</p> <p>A. Adverb B. Preposition C. Adjective</p>	3+2	01,05	An,U	C,F

	D. Noun E. Pronoun iv. Great achievers are often from a humble background. A. Noun B. Verb C. Adjective D. Adverb E. None of these				
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Course Name: Database Management System

Course Outcome

- CO1: Understand the concept of database management systems and Relational database.
 CO2: Identify the various data model used in database design.
 CO3: Design conceptual models of a database using ER modeling for real life applications and construct queries in Relational Algebra.
 CO4: Create and populate a RDBMS for a real life application, with constraints and keys using SQL.
 CO5: Select the information from a database by formulating complex queries in SQL.
 CO6: Analyze the existing design of a database schema and apply concepts of normalization to design an optimal database.
 CO7: Discuss indexing mechanisms for efficient retrieval of information from a database.
 CO8: Discuss recovery system and be familiar with introduction to web database, distributed databases.

Printed Pages: 02

University Roll No.

Mid Term Examination, Odd Semester 2022-23

B. Tech.(CSE/AIML/CCV/DA/IIoT/CSF/CSED), Year: II, Semester: III

Subject Code & Subject Name- BCSC1003 Database Management System

Time: 2 Hours

Maximum Marks: 30

Instruction for students:

1. Attempt both sections.
2. Use only blue pen to answer.
3. No B sheet will be given.

Section – A

Attempt All Questions

3 X 5 = 15 Marks

No.	Detail of Question	Marks	CO	BL	KL															
1	Explain the following: (a) Data independence (b) Data Definition Language (c) Primary Key'	3	CO1	U	F															
2	Explain Referential Integrity constraint with the help of an example.	3	CO3	U	F															
3	Draw 3-Schema architecture. Also define its all levels.	3	CO2	C	P															
4	Consider the Relation R (ABC) below: <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <th>A</th> <th>B</th> <th>C</th> </tr> <tr> <td>1</td> <td>2</td> <td>2</td> </tr> <tr> <td>2</td> <td>2</td> <td>3</td> </tr> <tr> <td>3</td> <td>3</td> <td>2</td> </tr> <tr> <td>4</td> <td>3</td> <td>3</td> </tr> </table> Identify all Super Key(s) and Candidate Key(s) in this relation.	A	B	C	1	2	2	2	2	3	3	3	2	4	3	3	3	CO3	R	C
A	B	C																		
1	2	2																		
2	2	3																		
3	3	2																		
4	3	3																		
5	Explain the working of DIVISION operator with the help of suitable example.	3	CO4	U	P															

Section - B

Attempt All Questions

5 X 3 = 15 Marks

No.	Detail of Question	Marks	CO	BL	KL																														
6	<p>Consider the following relation: EMPLOYEE (E_ID, ENAME, ADDRESS, SALARY, EMAIL_ID, D_NO)</p> <p>Write the SQL syntax for following queries:</p> <ol style="list-style-type: none"> 1. Mention the syntax to create employee table. 2. Add E_ID as primary key in employee table. 3. Remove column EMAIL_ID from employee table. 4. Display the details of the employee who work for department either E102 or E104 5. List the employee names starting with 'P'. 	5	CO2	E	C																														
7	<p>Construct an ER diagram for a Hospital with a set of patients and a set of medical doctors. Associate with each patient a log of the various tests and examinations conducted.</p> <p>Also convert your ER diagram into relation(s).</p>	5	CO3	C	C																														
8	<p>Consider the following relations:</p> <p>EMPLOYEE</p> <table border="1"> <thead> <tr> <th>EName</th> <th>Designation</th> <th>City</th> </tr> </thead> <tbody> <tr> <td>Jatin</td> <td>Product Owner</td> <td>New Delhi</td> </tr> <tr> <td>Shivani</td> <td>Scrum Master</td> <td>Chandigarh</td> </tr> <tr> <td>Sachin</td> <td>S/w Analyst</td> <td>Mumbai</td> </tr> <tr> <td>Ashwin</td> <td>Test Architect</td> <td>Chennai</td> </tr> </tbody> </table> <p>FT_EMP</p> <table border="1"> <thead> <tr> <th>EName</th> <th>Company</th> <th>Salary</th> </tr> </thead> <tbody> <tr> <td>Sachin</td> <td>Amdocs</td> <td>80000</td> </tr> <tr> <td>Shivani</td> <td>GrapeCity</td> <td>70000</td> </tr> <tr> <td>JK Reddy</td> <td>Birlasoft</td> <td>65000</td> </tr> <tr> <td>Jatin</td> <td>Nagarro</td> <td>75000</td> </tr> </tbody> </table> <p>Perform following join operations on these relations:</p> <ol style="list-style-type: none"> (a) Natural Join (b) Left Outer Join (c) Right Outer Join (d) Full Outer Join (e) Identify the number of tuples after performing Cross Join 	EName	Designation	City	Jatin	Product Owner	New Delhi	Shivani	Scrum Master	Chandigarh	Sachin	S/w Analyst	Mumbai	Ashwin	Test Architect	Chennai	EName	Company	Salary	Sachin	Amdocs	80000	Shivani	GrapeCity	70000	JK Reddy	Birlasoft	65000	Jatin	Nagarro	75000	5	CO4	E	C
EName	Designation	City																																	
Jatin	Product Owner	New Delhi																																	
Shivani	Scrum Master	Chandigarh																																	
Sachin	S/w Analyst	Mumbai																																	
Ashwin	Test Architect	Chennai																																	
EName	Company	Salary																																	
Sachin	Amdocs	80000																																	
Shivani	GrapeCity	70000																																	
JK Reddy	Birlasoft	65000																																	
Jatin	Nagarro	75000																																	

Course Name: Introduction to Machine Learning

Course Outcome

- CO1- Apply the basics concept of machine learning including bias-variance tradeoff
- CO2- Apply the concepts of regression
- CO3- Conceptualize supervise and re-enforcement learning for classification
- CO4- Formulate the ensemble methods for improving classification
- CO5- Apply ANN with optimization in machine learning
- CO6- Design and develop projects in machine learning

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University Roll No.

Mid Term Examination, Odd Semester 2022-23

Program (Computer Engineering (AIML)), Year ~~2022~~, Semester-III
Subject Code BCSE 0701 & Subject Name- Introduction to Machine Learning

Time: 2 Hours

Maximum Marks: 30

Instruction for students: Attempt all the questions in sequential order and explain the concepts with real-life examples or diagrams.

Section – A

Attempt All Questions

3 X 5 = 15 Marks

No.	Detail of Questions	Marks	CO	BL	KL
1	Discuss the difference between AI, ML and DL.	3	1	R	F
2	What is NumPy? How to create a 2-dimensional array, explain with complete code.	3	1	U, A	C
3	Explain the life cycle of machine learning in detail.	3	1	R, U	C
4	How traditional programming is different from machine learning, explain with examples and a flow diagram.	3	1	U	F
5	Discuss the two methods of handling categorical data with examples.	3	1	U, A	C, M

Section – B

Attempt All Questions

5 X 3 = 15 Marks

No.	Detail of Questions	Marks	CO	BL	KL														
6	Define Machine Learning and explain all types of learning with real-life examples	5	1,3	R, U	F, C														
7	Explain any two types of bad data and discuss the methods of handling them with code.	5	1	U, E	C														
8	What is a Linear Regression? The last five years advertisement cost and sales of a company are given in thousands. The company wants to do an advertisement of ₹ 200 thousand in the year 2023. Design a linear regression model and predict the value of sale when the investment cost of advertisement is ₹ 200 thousand. <table border="1"><tr><td>Advertisement</td><td>₹90</td><td>₹120</td><td>₹150</td><td>₹100</td><td>₹130</td><td>₹200</td></tr><tr><td>Sales</td><td>₹1000</td><td>₹1300</td><td>₹1800</td><td>₹1200</td><td>₹1380</td><td>??</td></tr></table>	Advertisement	₹90	₹120	₹150	₹100	₹130	₹200	Sales	₹1000	₹1300	₹1800	₹1200	₹1380	??	5	2	U, An, E	C, M
Advertisement	₹90	₹120	₹150	₹100	₹130	₹200													
Sales	₹1000	₹1300	₹1800	₹1200	₹1380	??													

Course Name: Introduction to Virtualization and Cloud Computing**Course Outcome**

- CO1: Understand the basics of virtualization technology and hypervisors.
- CO2: Analyze the trade-offs between deploying applications in the cloud and over the local infrastructure.
- CO3: Recognize real-world problem using cloud computing through group collaboration.
- CO4: Understand on-demand utility computing phenomenon of cloud computing.
- CO5: Understand the issues involved in cloud computing.

Printed Pages: 01**University Roll No.****Mid Term Examination, Odd Semester 2022-23****B.Tech. CSE-CCV Year: II Semester: III****Introduction to Virtualization and Cloud Computing (BCSE1502)****Time: 2 Hours****Maximum Marks: 30****Section - A****Attempt All Questions** **$3 \times 5 = 15$ Marks**

No.	Detail of Question	Marks	CO	BL	KL
1	Explain any three services that falls under the category of XaaS.	3	4	E	M
2	What are the ways by which a public cloud helps its customers reduce their IT costs?	3	5	R	F
3	What are the challenges with cloud computing.	3	3	U	C
4	Define the term Multi tenancy and Resource pooling.	3	3	E	P
5	Explain with example the deployment model in cloud computing.	3	5	A	P

Section - B**Attempt All Questions** **$5 \times 3 = 15$ Marks**

No.	Detail of Question	Marks	CO	BL	KL
1	Explain anatomy of cloud with the help of example.	5	4	U	C
2	Differentiate between a. Cluster and Grid Computing. b. Hybrid Cloud and Cloud Bursting.	5	3	A	M
3	A company needs to provide IT services to a worldwide customer base utilizing a diverse set of devices. How cloud computing can help the company deliver such services to its customer.	5	5	An	M

Course Name:

Course Outcome

- CO1- Understand software development methodology and application security.
- CO2- Explain input validation strategies; protect sensitive data, effective authentication and authorization strategies.
- CO3- Understand various attacks like DoS, buffer overflow, web specific and database specific.
- CO4- Implement security as a culture to show mistakes that make applications vulnerable to attacks.
- CO5- Demonstrate the security enhancements of web-based applications.
- CO6- Understand the basics of data security threats.
- CO7- Apply the data security threat techniques and its counter measures.

Printed Pages:

University Roll No.

Mid Term Examination, Odd Semester 2022-23

B.Tech CSE-CSF, II Year, III Semester

BCSE0601 & IT APPLICATION AND DATA SECURITY

Time: 2 Hours

Maximum Marks: 30

Section – A

Attempt All Questions

3 X 5 = 15 Marks

No.	Detail of Question	Marks	CO	BL	KL
1	Explain the difference between Compiled and Interpreted Language and give the example of Compiled and Interpreted Language.	3	CO1	A	P
2	List the various methodologies in Security testing?	3	CO2	A	P
3	What is Session Hijacking?	3	CO3	U	D
4	What information can an attacker steal using XSS?	3	CO4	E	DI
5	What is Intrusion Detection System (IDS)? How it is different from IPS?	3	CO3	A	D

Section – B

Attempt All Questions

5 X 3 = 15 Marks

No.	Detail of Question	Marks	CO	BL	KL
6	Discuss and explain various vulnerabilities or attack related to the web-based application?	5	CO3	U	D
7	What is the difference between Authentication vs Authorization? Explain with a case study.	5	CO4	E	DI
8	What is Cross Site Tracing (XST)? How can it be prevented?	5	CO4	E	S

Course Name: Data Visualization

Course Outcome

- CO1: Apply the basic concepts of Data Visualization.
- CO2: List various business moment decisions.
- CO3: Apply the concept of data preprocessing.
- CO4: Differentiate Data types .
- CO5: Implement Data Preprocessing technique.

Printed Pages: 02 University Roll No.

Mid Term Examination, Odd Semester 2022-23

B. Tech. (Hons.)CS, II Year, III Sem.

Data Visualization: BCSS0051

Time: 2 Hours

Maximum Marks: 15

Section – A

Attempt All Questions

3 X 1 = 3 Marks

No.	Detail of Question	Marks	CO	BL	KL
1	Differentiate Data Analysis Vs Exploratory Data Analysis	1	1	R	F
2	Define Multi-co-linearity and why it is harmful for any model?	1	2	R	F
3	Differentiate precision and recall.	1	2	U	F

Section – B

Attempt All Questions

3 X 2 = 6 Marks

No.	Detail of Question	Marks	CO	BL	KL
4	Discuss the importance of Data Visualization	2	3	U	F
5	Differentiate Univariate , Bivariate and Mutivariate data visualization using a suitable example	2	1	U	F
6	Write a program in python to do the following: i) Use appropriate plot to detect an outlier. ii) Find out the correlation matrix. Note: for your reference suppose you are reading a car, csv dataset	2	4	R	C

Section – C

Attempt All Questions

2 X 3 = 6 Marks

No.	Detail of Question	Marks	CO	BL	KL
7	Answer the following three questions based on the box-plot above. (i) What is inter-quartile range of this dataset?	3	1	A	P

	<p>(please approximate the numbers) In one line, explain what this value implies.</p> <p>(ii) What can we say about the skewness of this dataset?</p> <p>(iii) If it was found that the data point with the value 25 is actually 2.5, how would the new box-plot be affected?</p> <p style="text-align: center;">Box-Plot of variable 'X'</p> <p>The box plot displays the distribution of variable 'X'. The x-axis ranges from 0 to 25 with major ticks every 5 units. The median is at 7. The box spans from approximately 6 to 11. The whiskers extend from 3 to 18. A single outlier is located at 25.</p>			
8	<p>Suppose a data scientist has to work on Black Friday Sales Prediction problem statement and because of this he has decided to build his multiple linear regression model for this. Everyone knows that before building a model one has to perform the exploratory data analysis so, he decided to do this using data visualization. Kindly suggest what are the different plot he can use for the followings:</p> <ul style="list-style-type: none"> a) Finding out the outlier and skewness b) To see the correlation between Sales and other variables c) What is the percentage of black Friday sales out of total sales d) How can he visualize the time series data 	3	1	A P

Course Name: Introduction to Business Analytics

Course Outcome

- CO1- Understand the use of reference architecture in business analytics.
- CO2- Explain the decision support science and data warehouse
- CO3- Understand the concepts of Business Intelligence.
- CO4- Explain the KDD in data mining.
- CO5- Understand the process of analysis using Dashboards and Reports.
- CO6- Explain Big Data, Filtering BigData and Adoption Architecture.

Printed Pages: 2

University Roll No.

Mid Term Examination, Odd Semester 2022-23

Program (B.Tech(CS(DA))), IInd Year, IIIrd Semester

Subject Code & Subject Name- BCSE0551 Introduction to Business Analytics

Time: 2 Hours

Maximum Marks: 30

Instruction for students:

All Questions are compulsory.

Section - A

Attempt All Questions

3 X 5 = 15 Marks

No.	Detail of Question	Marks	CO	BL	KL
1	Draw a flow diagram for the Business analytics data-driven decision making.	3	1	U	C
2	A data warehouse can be modeled by either a star schema or a snowflake schema. Briefly describe the similarities and the differences of the two models, and then analyze their advantages and disadvantages with regard to one another.	3	2	R	C
3	Given the following distribution of returns, determine the lower quartile: {10% 23% 12% 21% 14% 17% 16% 11% 15% 19%}	3	1	U	C
4	If the mean of numbers 28, x, 42, 78 and 104 is 62, what is the mean of 48, 62, 98, 124 and x?	3	1	E	C
5	Mention three different components of business analytics.	3	3	U	F

Section – B

Attempt All Questions

5 X 3 = 15 Marks

No.	Detail of Question	Marks	CO	BL	KL
6	<p>Suppose that a data warehouse consists of the three dimensions time, doctor, and patient, and the two measures count and charge, where charge is the fee that a doctor charges a patient for a visit.</p> <p>a) Enumerate three classes of schemas that are popularly used for modeling data warehouses.</p> <p>b) Draw a schema diagram for the above data warehouse using one of the schema classes listed in (a).</p>	5	2	E	C
7	List the characteristics of a Business Intelligence solution. Explain how Business Intelligence can help companies analyze changing trends in market share or changes in customer behavior.	5	3	E	C
8	Describe Decision Support System. How many types of DSS are there? Also explain level of DSS.	5	2	E	F

Course Name:

Course Outcome

CO1: Understand the concept of database management systems and Relational database.

CO2: Identify the various data model used in database design.

CO3: Design conceptual models of a database using ER modeling for real life applications and construct queries in Relational Algebra.

CO4: Create and populate a RDBMS for a real-life application, with constraints and keys, using SQL.

CO5: Select the information from a database by formulating complex queries in SQL.

CO6: Analyze the existing design of a database schema and apply concepts of normalization to design an optimal database.

CO7: Discuss recovery system and be familiar with introduction to web database, distributed databases.

CO8: Explain the differences between RDBMS and No-SQL, BASE properties and No-SQL databases.

CO9: Design and implement the database system with the fundamental concepts of DBMS using Python.

Printed Pages: 04

University Roll No.

Mid Term Examination, Odd Semester 2022-23

B. Tech. (Hons.) CS, IIrd Year, IIIrd Semester

BCSC0054: ADVANCED DATABASE MANAGEMENT SYSTEM

Time: 2 Hours

Maximum Marks: 15

Instruction for students:

- 1.** All questions should be answered into given sequenced order for all sections.
2. Answer should be brief and to-the-point with neat sketch/diagram.
3. Any missing or wrong data may be assumed suitably with giving proper justification.
4. Mentioned on the right-hand side margin, indicates the full marks for respective questions

Section - A

Attempt All Questions

1 X 3 = 3 Marks

	a. Employee \bowtie Dept b. Employee $\bowtie\!\!\bowtie$ Dept c. Employee $\bowtie\!\!\bowtie\!\!\bowtie$ Dept				
2	Differentiate between Super key and Candidate Key. Suppose a relation contains students information such as <ul style="list-style-type: none"> • Roll no • Aadhaar no • Univ Roll no • Name • Sec (a) Which of the above are candidate keys? (b) Form atleast 4 super keys.	1	1	A	C
	Consider the following schema: Person (name, age, gender) Frequents (name, pizzeria) Eats (name, pizza) Serves (pizzeria, pizza, price) Description: <ul style="list-style-type: none"> • Eats contains information about what type of pizza each person (customer) eats (likes) • Name is always the customer's name • Frequents record information about pizzerias that each customer frequents (visits) • Serves contains information about all possible pizza types for each pizzeria Write query using relational algebra for finding the name of person who eats <i>all</i> type of pizzas.	1	4	C	P

Section – B

Attempt All Questions

2 X 3 = 6 Marks

No.	Detail of Question	Marks	CO	BL	KL
4	Rohan had shifted his website where he sells caps and hats from PHP to more modern REACT.JS. He need not to make any changes in his dbms design and schema while making this shift. What concept of DBMS does he adhere to, so that no changes were required in schema while making the shift? Also,	2	2	A	P

	discuss types of this concept with an example.																															
5	DBMS is preferred over generic file systems. True or False with proper reasons and scenarios.	2	1	R C																												
	What are the various set operations in Relational Algebra? Can we apply set operations on the following relations?																															
6	<p>StudentBTech:</p> <table border="1"> <tr> <th>sID</th> <th>sName</th> <th>CPI</th> <th>Branch</th> </tr> <tr> <td>1</td> <td>Amit</td> <td>2.3</td> <td>CS</td> </tr> <tr> <td>2</td> <td>Ajay</td> <td>4.1</td> <td>EC</td> </tr> <tr> <td>3</td> <td>Ram</td> <td>3.8</td> <td>CS</td> </tr> </table> <p>StudentMBA:</p> <table border="1"> <tr> <th>sID</th> <th>sName</th> <th>CPI</th> </tr> <tr> <td>1</td> <td>Amanda</td> <td>6.1</td> </tr> <tr> <td>4</td> <td>John</td> <td>2.3</td> </tr> <tr> <td>9</td> <td>Samantha</td> <td>7.1</td> </tr> </table> <p>Provide a reason for your answer. If your answer is no, what changes are required to make it fit for set operations?</p>	sID	sName	CPI	Branch	1	Amit	2.3	CS	2	Ajay	4.1	EC	3	Ram	3.8	CS	sID	sName	CPI	1	Amanda	6.1	4	John	2.3	9	Samantha	7.1	2	3	E P
sID	sName	CPI	Branch																													
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3	Ram	3.8	CS																													
sID	sName	CPI																														
1	Amanda	6.1																														
4	John	2.3																														
9	Samantha	7.1																														

Section - C

Attempt All Questions

3 X 2 = 6 Marks

No.	Detail of Question	Marks	CO	BL	KL
	<p>Consider the following schema:</p> <p>Suppliers(<u>sid</u>: integer, sname: string, address: string)</p> <p>Parts(<u>pid</u>: integer, pname: string, color: string)</p> <p>Catalog(<u>sid</u>: integer, <u>pid</u>: integer, cost: float)</p>				
7	<p>a. Find the <u>names of suppliers</u> who live in "Mathura."</p> <p>b. Find the <u>details</u> of parts whose color is red.</p> <p>c. Find the <u>sids</u> of the supplier who supplies part having cost greater than 10.</p> <p>d. Find the <u>sids</u> of suppliers who supply some red parts.</p> <p>e. Find the <u>name of suppliers</u> who supply some red</p>	3	3	C	M

	<p>parts.</p> <p>f. Find the <i>name of suppliers</i> who supply some red parts <i>and</i> green parts too.</p>			
8	<p>Notown Records has decided to store information about musicians who perform on its albums (as well as other company data) in a database. The company has wisely chosen to hire you as a database designer (at your usual consulting fee of \$2500/day).</p> <ul style="list-style-type: none"> • Each musician that records at Notown has an SSN, a name, an address, and a phone number. • Each instrument used in songs recorded at Notown has a unique identification number, a name (e.g., guitar, synthesizer, flute) and a musical key (e.g., C, B-flat, E-flat). • Each album recorded on the Notown label has a unique identification number, a title, a copyright date, a format (e.g., CD or MC), and an album identifier. • Each song recorded at Notown has a title and an author. • Each musician may play several instruments, and a given instrument may be played by several musicians. • Each album has a number of songs on it, but no song may appear on more than one album. • Each song is performed by one or more musicians, and a musician may perform a number of songs. • Each album has exactly one musician who acts as its producer. A musician may produce several albums, of course. <p>Design a conceptual schema for Notown and draw an ER diagram for your schema. The preceding information describes the situation that the Notown database must model. Be sure to indicate all key and cardinality constraints and any assumptions you make.</p>	3	3	C M

Course Name: Probability & Applied Statistics**Course Outcome**

- CO1: List different kind of statistics for data analysis.
 CO2: Differentiate measure of central tendency and measure of variability.
 CO3: Define Normalization and Standardization.
 CO4: Conceptualize Probability distribution
 CO5: Apply statistics in various research methods

Printed Pages: 02**University Roll No.****Mid Term Examination, Odd Semester 2022-23****B. Tech. (Hons.) CS, II Year, III Sem.****Probability & Applied Statistics (BCSS0052)****Time: 2 Hours****Maximum Marks: 15****Section – A***Attempt All Questions*

3 X 1 = 3 Marks

No.	Detail of Question	Marks	CO	BL	KL
1	Define Statistics and differentiate it with Applied Statistics.	1	1	R	F
2	What does central tendency mean to you. List out all kind different measures of data used to evaluate the Central Tendency?	1	2	R	C
3	Variable X has a median of 50, the distribution of the data is positively skewed. Comment on the Mean of the Data?	1	2	U	P

Section – B*Attempt All Questions*

3 X 2 = 6 Marks

No.	Detail of Question	Marks	CO	BL	KL
4	Differentiate Normalization and standardization by using suitable example.	2	3	U	F
5	What does it mean to say a statistic is unbiased?	2	1	U	C
6	Define Probability? Use the given values Find out the Inter quartile range Values- 32, 6, 21, 10, 8, 11, 12, 36, 17, 16, 15, 18, 40, 24, 21, 23, 24, 24, 29, 16, 32, 31, 10, 30, 35, 32, 18, 39, 12, 20	2	4	A	P

Section – C*Attempt All Questions*

2 X 3 = 6 Marks

No.	Detail of Question	Marks	CO	BL	KL
7	i) During the interviews the researcher	3	1	A	F

	<p>questions the interviewees about their income and how many times they had voted previously. Income is what type of variable?</p> <p>ii) Counting the number of patients who are categorized into one of several diagnostic categories for the sake of comparison is an example of what type of variable?</p>				
8	<p>Use the given values and write a program in python to do its descriptive statistics.</p> <p>Values- 32, 6, 21, 10, 8, 11, 12, 36, 17, 16, 15, 18, 40, 24, 21, 23, 24, 24, 29, 16, 32, 31, 10, 30, 35, 32, 18, 39, 12, 20</p>	3	2	A	P

Course Name: Ethics & Values

Course Outcome

CO1-Rationality, critical thinking and problem solving.

CO2-Profound Ethical Decision Making and Value Judgment Capacity.

CO3-The enhanced ability to understand the ethical problems of personal, social & professional life.

CO4-Well constructed professional approach to rationalize life issues through developed life-skills.

CO5-Understanding of Personal, Professional & Social ethics.

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University Roll No.

Mid Term Examination, Odd Semester 2022-23

Bio. Tech (III) Year, Semester - VI

Subject Code & Subject Name- BELH-0006 Ethics & Values

Time: 1.30 Hours

Maximum Marks: 30

Instruction for students: Attempt all questions.

Section A -Objective Type

Section B -Multiple Choice

Section C- Assertion and Reason

Section – A Objective Type		1 X 10 = 10 Marks			
No.	Detail of Question	Marks	CO	BL	KL
1	What is morality? A. Opinion B. Interest C. Bias D. Objectivity	1	5	U	C
2	What do ethics stand for? A. Personal opinion B. Individual C. Objective D. Only Rational	1	1, 3, 5	E	F
3	Problem solving approach requires: A. Only Reasons B. Only Critical Thinking C. Only Problems D. None of these	1	1,2	A, An	, P
4	What is good & What is Right? A. Normative B. Descriptive C. Metaethics D. Selective	1	1, 5	U, AN	C, M
5	Integrity is important for: A. Personal Ethics B. Professional Ethics C. Social Ethics D. All of these.	1	1,2,3,4,5	U, E , C, A	P
6	Our current PM is honest: B. Meta-ethics B. Descriptive C. Bias D. Normative	1	1&2	U, E	C, P
7	Run Way Trolley Problem provides insights on: A. Ethical decision-making B. personal morality C. Both D. Both Not	1	1, 2, 3	U, E, An	F, R,

8	Ego, anger, greed, self-interest come under: A. Logical thinking B. Ordinary thinking C. EDM D. None of these	1	1,2,3	A, U, E , An,C	C, P, R
9	Marcus was in dilemma because of : A. Personal Ethics B. Professional Ethics C. Both Personal & Professional D. Only Morality	1	5	C, U, AN	C ,M
10	What do we require other than values to become a successful professional? A. Smartness B. Favors C. Skills D. All of these	1	3,4,5	A,U, C	C, R

Section – B Multiple Choice 10 X 1 = 10 Marks

No.	Detail of Question	Marks	CO	BL	KL
11	Rachel can ship the products in case: 1. Harmless 2. Assured quality 3. Passed minimum checks 4. Only data is safe A. 1& 4 B. 2& 4 C. 1,2& 3 D. 4	1	1,2,4	A, U, An,	C, M
12	Which of the following are false for Runway Trolley Problem first version? 1. Save five 2. Push the Fat Man 3. Change the track 4. Do nothing A. 1, 2, & 3 B. only 1 C. Only 2 D. Only 1& 4	1	1, 2, 5	U, An,	R , F
13	Values have extensive role in; 1. Only personal life 2. only professional life 3. Only social life 4 . None of these A. 2& 3 B. 1,2 C. 1,2,3 D. Only 4	1	2,4, 5	U, An, A	C, R , P
14	Triple P modal envolves: 1. Business Ethics2. Social Responsibility 3. Environment 4. Only Profit A. 4 & 2 B. 1,2 & 3 C. Only 1 D. Only 4	1	3,4,5	U, A	C, R
15	Doctrine of Double Effect does not consider: 1. Only Positive Results 2. Only Negative Results 3. Intentions 4. Means A. 1& 2 B. 2& 3 C. 1,2,3,4 D. Only 1& 4	1	1, 2, 3	U, A, An , E	C, R , P , M

16	Engineering ethics means: 1. Skilled engineering 2. Value in engineering 3. E.D.M. 4. Only Profit A. 1& 4 B. 2 & 4 C. 1,2& 3 D. Only 4	1	2,4,5	U, A, E	C, M,
17	Humility requires: 1. Care 2. Humanity 3. Social Ethics 4. Honesty A. Only 4 B. 1,2&3 C. 2& 4 D. 3 & 4	1	2,3,4,5	A, E, , An	M,
18	Utilitarianism is not based on: 1. Intention 2. Maximum Good 3. GHP 4. Utility A. 1,2 B. 1,2,3 C. 1,2,3,4 D. only 1	1	1,2,3	A, E, An,	F, R , C
19	Deontology includes: 1. Utility 2. Intention 2. Results 4. Action A. 1,2 B. 2,3 C. 3,4 D 1,4	1	1,2,3 , 5	A, E, , An	C, R , M
20	Student life requires the development of: 1. Reason 2. Values 3. ethics 4. Only Results A. 1,2 & 3 B. 2,4 C. 3,4 D. 2,3,4	1	1,2,3 ,4,5	A, E, An, C	M, P

Section – C Assertion (A) and Reason (R) Based

10 X 1 = 10 Marks

Fill the bubbles as per following instructions for this section:

A: If only Assertion is Correct.

B: If only Reason is Correct.

C: Both Assertion and Reason are correct and Reason is right for the Assertion.

D: Both Assertion and Reason are correct but Reason is not right for the Assertion.

No.	Detail of Question	Marks	CO	BL	KL
21	S: Academic ethics is necessary for the student. R: It has an impact on the over all development of a student.	1	1,2	U, An, E	M, P
22	S: rationality is to apply logic & reason. R: An engineer only requires skills.	1	1,2,4	U,An,A, E	M, C,
23	S: Bio-technology is good for human health. R: It takes care ethics and humanity.	1	1,2,3	U, An, E,	M , C , F
24	S: Logical thinking involves only rationality. R: EDM involves rationality, critical thinking and problem solving in			1,2, 3,4	M , C , F

	decision making which is required for life issues.	1		U, An, E,	
25	S: A student should focus on grades only. R: Both Good academics and personality are required for placements.	1	1,2,3,4,5	U, An, E, C	M, C
26	S: Ethics matters on personal level. R: Morality is subjective opinion on right and wrong.	1	1,2,3,4,5	U, An, E	C, F, R
27	S: Marcus can supply data as he is the creator of the medical app. R: Marcus is responsible to maintain the privacy.	1	1,2,3,4,5	U, An, E	M, F, R,
28	S: Rachel in case does not launch the product can have the reason. R: A harmful product can damage corporate brand image.	1	1,2 ,3, 4,5	U, An, E,	M, F,
29	S: Changing the track would be right to save 5 persons. R: Killing one is not intended but follows as the result.	1	1,2 ,3	U, An E ,	M ,C, F, R
30	S: I should mind my rights and Wrongs. R: Minding one's own rights and wrongs may be defendable on right reasons.	1	1,2,3	U, An, E	M, C

Course Name:

Course Outcome

- CO1- Understand the basic grammatical skills
- CO2- Apply the prescribed language skills in writing
- CO3- Express ideas in writing according to time and tense
- CO4- Analyze the comprehension and answer the questions based on it
- CO5- Enrich vocabulary in terms of contextual and situational conversation

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University Roll No.

Mid Term Examination, Odd Semester 2022-23

**B. Tech. (Hons.) CS / ~~ECE/ES~~ / BCA (Hons.), II Year, III Semester
BELA 0001 & English for Occupational Purpose - I**

Time: 2 Hours

Maximum Marks: 15

Instruction for students:

Attempt all three questions

Section - A

Attempt All Questions

$1 \times 3 = 3$ Marks

No.	Detail of Question	Marks	CO	BL	KL
1	<p>Read the following paragraph and answer the questions as directed.</p> <p>With the end of the War in Europe in April 1945, India's struggle for freedom entered a new phase. The Revolt of 1942 and the INA (Indian National Army) had revealed the heroism and determination of the Indian people. With the release of the national leaders from jail, the people began to look forward to another, perhaps the final, struggle for freedom. The new struggle took the form of a massive movement against the trial of the soldiers and officers of the INA. The government decided to put on trial in the Red Fort at Delhi Shah Nawaz Khan, Gurdial Singh Dhillon and PremSehgal, officers of the INA, who had earlier been officers in the British-Indian army. They were accused of having broken the oath of loyalty to the British Crown and thus of having become 'traitors'. On the other hand, the people welcomed them as national heroes. Huge popular demonstrations demanding their release were held all over the country. The entire country now seethed with excitement and confidence that this time the struggle would be won. They would not let these heroes be punished. And the British government was this time in no position to ignore</p>	1	4	C	M

	Indian opinion. a. Why Government decided to put officers of INA on trial? b. How did the trial become the source of new struggle?				
2	a. <u>A</u> star in the murky world is bound to die. (Countable / Uncountable Noun) b. <u>Air</u> -purifiers are the need of the hour. (Countable / Uncountable Noun)	1	1	A	P
3	Do as directed: a. Ram left Ayodhya for his parents. (Change into Passive) b. Madhav, son of Shyam, visited Mathura.(Change into Passive)	1	1	A	P

Section – B

Attempt All Questions

2 X 3 = 6 Marks

No.	Detail of Question	Marks	CO	BL	KL
4	Identify the different word formation processes in the following words: a. Infotainment b. Webinar c. Bot d. Interpol	2	5	U	P
5	Describe the scenic beauty of the hill station you visited during your Holi holidays.	2	3	A	C
6	Do as directed: a. Mathura is a holy place.(Change into Interrogative Sentence) b. This dress is beautiful. (Change into Exclamatory Sentence)	2	2	E	C

Section – C

Attempt All Questions

3 X 2 = 6 Marks

No.	Detail of Question	Marks	CO	BL	KL
7	You are the class representative. Give a detailed description of your first meeting with the class advisor on the issues pertaining to academics.	3	5	C	F
8	Give a short description of the memorable day of your life when you were able to make your parents happy.	3	3	AN	C