

Total No. of Questions: 3

Enrollment No... EN22CS301175



Faculty of Engineering
Mid Sem I Examination September-2024
CS3EL13 Data Science

Programme: B.Tech.

Branch/Specialization: CSE

Duration: 1.5 Hrs.

Maximum Marks: 30

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d. Assume suitable data if necessary. Notations and symbols have their usual meaning.

		Marks	BL	CO	PO	PSO
Q.1	i. Which of the following is the most important language for Data Science?	1	BL01	CO01	PO01	PSO01
	a) Java b) Ruby					
	c) R d) None of these					
	ii. Which of the following focuses on the discovery of (previously) unknown properties on the data?	1	BL02	CO01	PO01	PSO01
	a) Data mining b) Big Data					
	c) Data wrangling d) Machine Learning					
	iii. Which of the following step is performed by data scientist after acquiring the data?	1	BL01	CO01	PO02	PSO01
	a) Data Cleansing b) Data Integration					
	c) Data Replication d) All of these					
	iv. Which of them is not a type of random variable?	1	BL1	CO02	PO02	PSO02
	a) Continuous b) Small					
	c) Mixed d) Discrete					
	v. Normal Distribution is applied for	1	BL02	CO02	PO02	PSO02
	a) Continuous Random Distribution					
	b) Discrete Random Variable					
	c) Irregular Random Variable					
	d) Uncertain Random Variable					
	vi. Which of the following is not a type of machine learning?	1	BL01	CO02	PO03	PSO01
	a) Supervised b) Unsupervised					
	c) Procedural d) Reinforced					



- Q.2 i. What is big data? 2 BL02 CO01 PO03 PSO03
 ii. Compare data science and statistics. 3 BL02 CO01 PO02 PSO03
 iii. Draw and explain data science framework. 7 BL02 CO01 PO01 PSO03
 OR iv. How is data science important in today's business world? Explain. 7 BL02 CO01 PO03 PSO03
- Q.3 i. Define population and sample. 2 BL02 CO02 PO04 PSO02
 ii. What is conditional probability? 3 BL02 CO02 PO03 PSO02
 iii. For the following sample observations: 7 BL04 CO02 PO02 PSO02
 {12 13 54 66 25}
 Determine the skewness and kurtosis of data.
 Also find the risk factor involved in the data distribution.
- OR iv. Read the below points carefully and answer the question: 7 BL04 CO02 PO04 PSO02
- Given that a person's last food order was pizza, there is 60% chance that his next order will also be pizza and 20% chance that his next order will be a Burger.
 - If a person's last food order was Burger, there is 60% chance that his next order will be a Sandwich and 40% chance that his next order will be a Pizza.
 - If a person's last food order was Sandwich, there is 20% chance that his next order will also be Sandwich and 80% chance that his next order will be a Burger.

Given that a person has currently ordered a pizza, what is the probability that he will order a Burger three orders from now?

Total No. of Questions: 3



Enrollment No... EN22C5301175

Faculty of Engineering / Science

Mid Sem-I Examination September-2024

CS3CO40 / BC3CO66 Software Engineering

Programme: B.Tech./ B. SC

Duration: 1.5 Hrs.

Branch/Specialization: CSE

Maximum Marks: 30

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d. Assume suitable data if necessary. Notations and symbols have their usual meaning.

Q.1 i. Which of the following CANNOT be called a software life cycle model?

Marks

BL

CO

PO

PSO

1

BL₁

CO₁

PO₀₁

PO₀₂

- ☒ a) Capability maturity model
- b) Waterfall model
- c) Prototype model
- d) RAD model

ii. Which of the following represents the life cycle of software development?

1

BL₁

CO₁

PO₀₁

PO₀₂

- ☒ a) Analysis---Design---Coding---Testing---Maintanance
- b) Analysis---Design---Coding---Maintanance---Testing
- c) Design--- Analysis---Coding---Maintanance---Testing
- d) Design--- Analysis---Coding---Maintanance---Testing.

iii. Software consists of

1

BL₁

CO₁

PO₀₁

PO₀₂

- a) Set of instructions + operating procedures
- ☒ b) Programs + Documentation + operating procedures
- c) Programs + Hardware manuals
- d) Set of programs.

iv. Which of the following UML diagrams has a static view:

1

BL₁

CO₂

PO₀₁

PO₀₂

- a) Collaboration Diagram
- ☒ b) Use-case Diagram
- c) State chart Diagram
- d) Activity Diagram



- v. Which one is not a step of requirement engineering?
 a) Requirements elicitation
 b) Requirements analysis
 c) Requirements design
 d) Requirements documentation
- vi. Which one is not a type of requirements?
 a) Gathering of requirements
 b) Capturing of requirements
 c) Understanding of requirements
 d) All of the above

1 BL₁ CO₂ PO₀₁
PO₀₂

1 BL₁ CO₂ PO₀₁
PO₀₂

- Q.2 i. What is Entry and Exit criteria in SDLC?
 ii. Describe about different types of software crisis and software myths?
 iii. Explain the unified process model with a neat sketch.
 OR iv. Explain Component Assembly Model with diagram.

2 BL₂ CO₁ PO₀₁
PO₀₂

3 BL₂ CO₁ PO₀₁
PO₀₂

7 BL₂ CO₁ PO₀₁
PO₀₂

7 BL₂ CO₁ PO₀₁
PO₀₂

- Q.3 i. What do you mean by Requirement Elicitation techniques.
 ii. Illustrate about Functional Requirements and Non-functional Requirements.
 iii. What is UML? Explain Use-case and class diagrams in detail.
 OR iv. Explain Requirement engineering process.

2 BL₂ CO₂ PO₀₁
PO₀₂

2 BL₂ CO₂ PO₀₁
PO₀₂

8 BL₂ CO₂ PO₀₁
PO₀₂

8 BL₂ CO₂ PO₀₁
PO₀₂

Total No. of Questions: 3



Enrollment No. EN22CS301175
Faculty of Engineering / Science
Mid Sem I Examination September-2024
CS3CO43 / BC3CO67 Computer Networks

Programme: B.Tech./ B. Sc
Duration: 1.5 Hrs.

Branch/Specialization: CSE
Maximum Marks: 30

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d. Assume suitable data if necessary. Notations and symbols have their usual meaning.

- | | Marks | BL | CO | PO | PSO |
|---|-------|------------------|------------------|--------------|----------------|
| Q.1 i. Which of the following MAC protocols reduces the probability of collisions by using time slots?
(a) Pure ALOHA (b) CSMA/CD
(c) Slotted ALOHA (d) CSMA/CA | 1 | BL ₁₁ | CO ₁₁ | 01, 05, 10 | 01, 03, 04 |
| ii. What is the purpose of the binary exponential back-off algorithm in Ethernet?
(a) To ensure equal bandwidth distribution among all users
(b) To manage retransmission timings after collisions
(c) To optimize frame size
(d) To detect frame errors | 1 | BL ₁₀ | CO ₁₀ | 01-07, 10-12 | 01, 02, 03 |
| iii. In CSMA/CD, what happens after a collision is detected?
(a) The frame is transmitted immediately after the collision
(b) Both stations stop transmission and wait for a random time before retrying
(c) One station continues while the other stops transmission
(d) Both stations wait for a fixed time before retransmitting | 1 | BL ₁₂ | CO ₁₂ | 01-08, 10 | 01, 02, 03, 04 |
| iv. What is the purpose of the subnet mask in an IPv4 network?
(a) To allocate IP addresses dynamically
(b) To identify the network and host portions of an IP address
(c) To fragment and reassemble data packets
(d) To configure network tunnelling | 1 | BL ₁₂ | CO ₁₂ | 01-08, 10 | 01, 02, 03, 04 |
| v. A packet has arrived with an M bit value of 1 and a fragmentation offset value of zero. Is this fragment _____.
(a) The first fragment (b) The last fragment
(c) The middle fragment (d) None of these | 1 | BL ₁₂ | CO ₁₂ | 01-08, 10 | 01, 02, 03, 04 |

vi. Traceroute reports a possible route that is taken by packets moving from some host A to some other host B. Which of the following options represents the technique used by traceroute to identify these hosts.

- (a) By progressively querying routers about the next router on the path to B using ICMP packets, starting with the first router
- (b) By locally computing the shortest path from A to B
- (c) By ensuring that an ICMP reply packet is returned to A by each router en-route to B, in the ascending order of their hop distance from A
- (d) None of these

1 BL₀₃ CO₀₃ 01-07, 10-12 01, 02, 03

Q.2 i. Explain the key difference between ALOHA and Slotted ALOHA.

2 BL₀₁ CO₀₁ 01-05, 10 01, 03, 04

ii. Describe the basic operation of the CSMA/CA protocol and explain how it prevents collisions in a wireless network.

4 BL₀₂ CO₀₂ 01-08, 10 01, 02, 03, 04

iii. Discuss the factors that affect Ethernet performance, including frame size, collisions, and transmission delay?

6 BL₀₄ CO₀₄ 01-07, 9-12 01, 02, 04

OR iv. Explain the Ethernet frame format in detail, discussing each field's purpose? How do Fast Ethernet and Gigabit Ethernet improve upon traditional Ethernet performance?

6 BL₀₃ CO₀₃ 01-07, 10-12 01, 02, 03

Q.3 i. Explain the purpose of IP fragmentation and reassembly in network communication.

2 BL₀₁ CO₀₁ 01-05, 10 01, 03, 04

ii. What is the role of NAT (Network Address Translation) in IP networking?

3 BL₀₂ CO₀₂ 01-08, 10 01, 02, 03, 04

iii. Explain the DHCP packet format and its role in IP address allocation and configuration in a network.

7 BL₀₃ CO₀₃ 01-07, 10-12 01, 02, 03

OR iv. A host in an organization has an IP address 172.16.10.20 with a subnet mask of 255.255.248.0, find out:

7 BL₀₃ CO₀₃ 01-07, 10-12 01, 02, 03

- a) How many subnets are there in the network
- b) What is the maximum number of hosts per subnet?
- c) Subnet address of this host.

Total No. of Questions: 3



Enrollment No. EN22CS301175

Faculty of Engineering

Mid Sem I Examination September - 2024

OE00018 Python Essentials

Programme: B.Tech.

Duration: 1.5 Hrs.

Branch/Specialisation: All

Maximum Marks: 30

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d. Assume suitable data if necessary. Notations and symbols have their usual meaning.

- | | Marks | BL | CO | PO | PSO |
|---|-------|-----|-----|-----|-----|
| Q.1 i. Which of the following is used to define a block of code in Python language?? | 1 | BL1 | CO1 | PO2 | |
| <input checked="" type="radio"/> a) Indentation | | | | | |
| b) Key | | | | | |
| c) Brackets | | | | | |
| d) All of these | | | | | |
| ii. Which of the following precedence order is correct in Python? | 1 | BL1 | CO1 | PO2 | |
| <input checked="" type="radio"/> a) Parentheses, Exponential, Multiplication, Division, Addition, Subtraction | | | | | |
| b) Multiplication, Division, Addition, Subtraction, Parentheses, Exponential | | | | | |
| c) Division, Multiplication, Addition, Subtraction, Parentheses, Exponential | | | | | |
| d) Exponential, Parentheses, Multiplication, Division, Addition, Subtraction | | | | | |
| iii. In which language is Python written? | 1 | BL1 | CO1 | PO1 | |
| a) Java | | | | | |
| <input checked="" type="radio"/> b) C | | | | | |
| c) PHP | | | | | |
| d) None of these | | | | | |
| iv. Which of the following commands will create a list? | 1 | BL2 | CO2 | PO2 | |
| a) list1 = list() | | | | | |
| b) list1 = list([1, 2, 3]) | | | | | |
| <input checked="" type="radio"/> c) list1 = [] | | | | | |
| d) list1 = { } | | | | | |
| v. What will be the output of the following Python code? | 1 | BL2 | CO2 | PO2 | |
| <pre>>>>t = (1, 2, 4, 3, 8, 9) >>>[t[i] for i in range(0, len(t), 2)]</pre> | | | | | |
| a) [2, 3, 9] | | | | | |
| b) [1, 2, 4, 3, 8, 9] | | | | | |
| <input checked="" type="radio"/> c) [1, 4, 8] | | | | | |
| d) [1, 4, 8] | | | | | |

- vi. What will be the output of the following Python code snippet?
`print('abcdef12'.replace('cd', '12'))`
 a) ab12ef12
 b) abcdef12
 c) ab12efcd
 d) None of these
- Q.2 i. What is the difference between a Mutable datatype and an Immutable data type? 2 BI.2 CO2 PO2
- ii. Write a program to reverse any given number. 2 BI.1 CO1 PO1
- iii. What are the Key features of Python?. 3 BI.1 CO1 PO1
- iv. Explain Python operators. 5 BI.1 CO1 PO2
- OR 1 ☒ Write a program to check a given number is palindrome or not. 5 BI.1 CO1 PO2
- Q.3 i. What is the difference between / and // in Python? 2 BI.2 CO2 PO1
- ii. Write a program to add an element in list. 4 BI.2 CO2 PO1
- Example:
`Lst1 = [2,3,4,5]`
 Add 7 in list
- 1 ☒ What is a String in Python? Write a program to reverse a string. 6 BI.2 CO2 PO2
- OR iv. Write a program to delete an element from tuple. 6 BI.2 CO2 PO3

Total No. of Questions: 3



Enrollment No. EN22CS301175
Faculty of Engineering / Science
Mid Sem I Examination September-2024
EN3HS04 / BC3HS04

Fundamentals of Management, Economics and Accountancy

Programme: B.Tech./B.Sc.

Duration: 1.5Hrs.

Branch/Specialization: CSE / CS
Maximum Marks: 30

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d. Assume suitable data if necessary. Notations and symbols have their usual meaning.

- Q.1 i. Management is:
- (a) What management does
 - (b) Function of planning, staffing, directing, controlling and coordination
 - (c) Making people do the things which you want them to do
 - (d) All of these
- ii. Management is an:
- (a) Art
 - (b) Science
 - (c) Both (a) & (b)
 - (d) None of these
- iii. How many levels of management are there:
- (a) 2
 - (b) 3
 - (c) 4
 - (d) 5
- iv. Full form of CRM is:
- (a) Consumer Relationship Management
 - (b) Customer Relationship Management
 - (c) Customized Relationship Management
 - (d) None of these
- v. Globalization means:
- (a) Integration of Indian Economy with World Economy
 - (b) Growth of Private Sector in India
 - (c) Relaxing Industries from License Raj
 - (d) All of these

Marks	BL	CO	PO	PSO
1	BL.1	CO1	PO1	

1	BL.2	CO1	PO1	
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1	BL.1	CO2	PO1	
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1	BL.1	CO2	PO1	
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1	BL.2	CO2	PO2	
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- vi. The emotional attachment of a customer towards a brand is known as _____ :
 (a) Brand associations
 (b) Perceived quality
 (c) Brand loyalty
 (d) Brand awareness
- Q.2 i. Define Decision Making. 2 BL1 CO2 PO2
 ii. What is the managerial role performed by manager in an organization? 3 BL2 CO1 PO1
 iii. What are the functions of management? 7 BL2 CO1 PO2
 OR iv. Explain the levels of management. 7 BL2 CO1 PO1
- Q.3 i. Define recruitment. 2 BL1 CO2 PO1
 ii. What is the role of Human Resource Manager? 2 BL2 CO1 PO1
 iii. Explain the importance of Marketing mix. 8 BL2 CO1 PO1
 OR iv. Explain the need for Human Resource Planning. 8 BL2 CO1 PO1

Total No. of Questions: 3



Enrollment No. EN 22CS3011 75

Faculty of Engineering

Mid Sem I Examination September-2024

CS3EL17 NoSQL Database

Programme: B.Tech.

Duration: 1.5 Hrs.

Branch/Specialization: CSE

Maximum Marks: 30

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d. Assume suitable data if necessary. Notations and symbols have their usual meaning.

- | | Marks | BL | CO | PO | PSO |
|--|-------|-----|-----|------------|--------------|
| Q.1 i. Which of the following is not a NoSQL database? | 1 | BL1 | CO1 | PO1
PO2 | PSO1 |
| a) SQL Server | | | | | |
| b) MongoDB | | | | | |
| c) Cassandra | | | | | |
| d) None of these | | | | | |
| ii. Which of the following is a NoSQL Database Type? | 1 | BL1 | CO2 | PO2 | PSO1
PSO2 |
| a) Key-Value | | | | | |
| b) Document databases | | | | | |
| c) JSON | | | | | |
| d) All of these | | | | | |
| iii. Which of the following is a wide-column store? | 1 | BL2 | CO2 | PO1
PO2 | PSO1 |
| a) Cassandra | | | | | |
| b) Riak | | | | | |
| c) MongoDB | | | | | |
| d) Redis | | | | | |
| iv. Most NoSQL databases support automatic _____ meaning that you get high availability and disaster recovery. | 1 | BL2 | CO1 | PO1 | PSO3 |
| a) Processing | | | | | |
| b) Scalability | | | | | |
| c) Replication | | | | | |
| d) All of these | | | | | |

v. Which of the following are the simplest NoSQL databases? 1 BL2 CO1 PO1 PSO2

- a) Key-value
- b) Wide-column
- c) Document
- d) All of these

vi. NoSQL databases are used mainly for handling large volumes of _____ data. 1 BL1 CO1 PO1 PSO1

- a) Unstructured
- b) Structured
- c) Semi-structured
- d) All of these

Q.2 i. Explain the Features of NoSQL database. 2 BL1 CO1 PO2 PSO1

ii. Write the difference between the ACID and BASE. 3 BL2 CO1 PO1 PSO1
PO4 PSO2

iii. Explain the triplestore database with an example and suitable diagram. 7 BL1 CO1 PO2 PSO1

OR iv. Write the difference between the RDBMS and NOSQL. 7 BL3 CO1 PO2 PSO1
PO3 PSO4

Q.3 i. How can the data be kept safe in NoSql? 2 BL1 CO2 PO2 PSO1

ii. What is eventual consistency in the context of NoSQL? 3 BL2 CO2 PO1 PSO1

iii. Explain the extending data layer with a diagram in detail. 7 BL3 CO2 PO1 PSO1
PO2 PSO2

OR iv. Explain the search features in NoSql. 7 BL3 CO2 PO2 PSO1
PSO3
