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Total No. of Pages : 3

**Sem. III, Examination, March/April, 2024**  
**Sub.: Big Data Analytics**  
**Subject Code : 91860**

Day and Date : Tuesday, 02-05-2024

Total Marks : 70

Time : 10.30 a.m. to 1.00 p.m.

**Instructions :**

- 1) All questions are compulsory
- 2) Figures to the right indicate full marks

**Q.1 Select an appropriate option from the following.**

[10]

- i. What was Hadoop named after?
  - A. Creator Doug Cutting's favorite circus act
  - B. Cutting's high school rock band
  - C. The toy elephant of Cutting's son
  - D. A sound Cutting's laptop made during Hadoop development.
- ii. Any data with unknown form is
  - A. Structured
  - B. Semi-Structured
  - C. Unstructured
  - D. All of the above
- iii. Which of the following is NOT a characteristic of Big Data?
  - A. Volume
  - B. Variety
  - C. Velocity
  - D. Validity
- iv. Which of the following is a NoSQL Database Type?
  - A. SOL
  - B. Document databases
  - C. JSON
  - D. All of the mentioned
- v. Apache Hive is data storage and that stores and organizes data for study and querying.
  - A. Querying tool
  - B. Mapper
  - C. MapReduce
  - D. All of the mentioned above

- vi. Numbers, text, image, audio and video data is
- A. Volume
  - B. Value
  - C. Varity
  - D. Variety
- vii. Prescriptive analytics is a process that optimize business practices. and provides instant recommendations on how to
- A. Analyzes data
  - B. Data storage
  - C. Data ingestion
  - D. None of the mentioned above
- viii. Mahout provides .....libraries for common and primitive Java collections.
- A. Java
  - B. JavaScript
  - C. Perl
  - D. Python
- ix. Predictive analytics uses statistics and to determine future performance
- A. Algorithmic techniques
  - B. Modeling techniques
  - C. System development and design techniques.
  - D. None of the mentioned above
- x. HBase uses the File System to store its data.
- A. Hive
  - B. Imphala
  - C. Hadoop
  - D. Scala

**Q.2 Attempt any three questions****[15]**

- a. Explain big data in Retail industry?
- b. Differentiate between traditional data and big data?
- c. What is Big data and Explain in detail types of big data?
- d. Explain 5V's of big data?

**Q.3 Attempt any three questions****[15]**

- a. What is share nothing architecture and explain in detail.
- b. What is NoSQL databases and Explain in detail types of NoSQL databases?
- c. What is map-reduce pattern and explain it's use cases.
- d. Comparison between MongoDB and CouchDB?

**Q.4 Attempt any three questions**

[15]

- a. What is HDFS? Explain in detail HDFS framework.
- b. What is hive? Explain in detail hive.
- c. Write a brief note on history of hadoop.
- d. What is Hadoop? Explain in detail Hadoop architecture.

**Q.5 Attempt any three questions**

[15]

- a. What is real time processing? Explain use cases in detail.
- b. What is real time analytics? Write the needs of real time analytics in big data?
- c. What is Apache spark? Explain the key features of Spark.
- d. What is Big data analytics? What are the types of Big Data Analytics?

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Total No. of Pages : 4

March-April 2024 Examination  
MCA SEM-IV Business Analysis  
Business Intelligence  
Subject Code: 91867

Day and Date : Thursday, 02-05-2024  
Time : 02:30 pm to 05:00 pm

Total Marks : 70

Q1. Select an appropriate option from the following.

[10]

- i. .... If the product is poor, the business will fail
- a) Ideal
  - b) Generally
  - c) Solely
  - d) Ultimately
- ii. ....is the heart of the warehouse.
- a) Data mining database server
  - b) Data mart database server
  - c) Data warehouse database server
  - d) Relational database server
- iii. How many types of BI user are there?
- a) 2
  - b) 3
  - c) 5
  - d) 4

- iv. Decision support system are used for
- a) Providing tactical information
  - b) Management decision making
  - c) Better operation of an organization
  - d) All of the mentioned
- v. One weakness of M-Commerce is that?
- a) A security measures are few and far between
  - b) It is too expensive
  - c) Security measures are too strict
  - d) All of the mentioned
- vi. Which of the following is a data visualization feature in Power BI?
- a) Charts
  - b) Word Processing
  - c) Video editing
  - d) Animation
- vii. A report or account is an:
- a) Informational Work
  - b) Technical work
  - c) Professional Work
  - d) All of the mentioned
- viii. What is Power BI?
- a) A business analytical tool
  - b) A DBMS
  - c) A project management software
  - d) A graphic design tool

- ix. The objective of BI is?
- a) To support decision making & complex problem solving
  - b) To support information gathering
  - c) To support data collection
  - d) To support data analysis
- x. Following are the phases of development of a BI system
- a) Analysis and design
  - b) Planning
  - c) Implementation & control
  - d) All of the mentioned

**Q.2 Attempt any three questions****[15]**

- i. Explain enabling factors in BI projects..
- ii. What is the development of a BI system?
- iii. Explain in detail BI architecture
- iv. What is Business Intelligence? Explain Effective & timely decisions with data, information & knowledge.

**Q.3 Attempt any three questions****[15]**

- i. What do you mean by Considerations: Optimizing the Presentation for the Right Message.
- ii. Explain Geo visualization and its different types?
- iii. Explain in detail about DIMENSIONAL ANALYSIS?

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- iv. Defines Standard Reports?

**Q4. Attempt any three questions**

[15]

- i. Write a note on data mining.
- ii. Explain marketing Models in Detail.
- iii. Write a Note on Business case studies
- iv. What is logistics and production model?

**Q5. Attempt any three questions**

[15]

- i. Rewrite a detail note on m-commerce life cycle.
- ii. Explain emerging applications of mathematical model with advantages and disadvantages.
- iii. Explain classes of mathematical model.
- iv. Write a details of development of mathematical model.

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Total No. of Pages : 3

**Sem. III, Examination, March/April, 2024**  
**Sub.: Cloud Computing**  
**Subject Code : 91856**

Day and Date : Tuesday, 30-04-2024

Total Marks : 70

Time : 10.30 a.m. to 1.00 p.m.

**Q1. Select an appropriate option from the following.**

**[10]**

Which of the following is not a type of cloud server?

- i.
  - a) Public Cloud Servers
  - b) Private Cloud Server
  - c) Dedicated Cloud Servers
  - d) Merged Cloud Servers
- ii. Which of the following are the features of cloud computing?
  - a) Security
  - b) Availability
  - c) Large Network Access
  - d) All of the mentioned
- iii. Which of the following is a type of cloud computing service?
  - a) Service-as-a-Software (SaaS)
  - b) Software-and-a-Server (SaaS)
  - c) Software-as-a-Service (SaaS)
  - d) Software-as-a-Server (SaaS)
- iv. Which of the following software can be used to implement load balancing?
  - a) Apache mod balancer
  - b) Apache mod\_proxy\_balancer
  - c) F6's BigIP
  - d) All of the mentioned
- V. Which of the following is a more sophisticated load balancer?
  - a) Workload managers
  - b) Workspace managers
  - c) Rack serve managers
  - d) All of the mentioned



- vi. Which of the following type of virtualization is also characteristic of cloud computing?
- |            |                         |
|------------|-------------------------|
| a) Storage | b) Application          |
| c) CPU     | d) All of the mentioned |
- vii. Which of the following service provider provides the least amount of built in security?
- |         |                         |
|---------|-------------------------|
| a) SaaS | b) PaaS                 |
| c) IaaS | d) All of the mentioned |
- viii. Which one of the following is Cloud Platform by Amazon?
- |             |                         |
|-------------|-------------------------|
| a) Azure    | b) AWS                  |
| c) Cloudera | d) All of the mentioned |
- ix. Which of the following backup technique is most space efficient?
- |                        |                         |
|------------------------|-------------------------|
| a) Full backup         | b) Incremental backup   |
| c) Differential backup | d) All of the mentioned |
- x. Which one of the following options can be considered as the Cloud?
- |             |                         |
|-------------|-------------------------|
| a) Hadoop   | b) Web Applications     |
| c) Intranet | d) All of the mentioned |

**Q.2 Attempt any three questions.**

[15]

- i. What is Cloud Computing? Explain Roots of Cloud Computing.
- ii. What are the different types of cloud?
- iii. Explain the features of Cloud Computing?
- iv. Write a note on SaaS & PaaS.

**Q.3 Attempt any three questions.**

[15]

- i. Explain in detail virtual machine provisioning services?
- ii. Explain load balancing with their advantages & disadvantages
- iii. What is hypervisor explain in detail.
- iv. Write a note on porting application.

**Q.4 Attempt any three questions.**

[15]

- i. What are the cloud managing product?
- ii. Explain challenges of security the cloud.
- iii. What is SAN? Explain its advantages.
- iv. Write in detail administrating the cloud.

**Q.5 Attempt any three questions.**

[15]

- i. Write in detail Risk Assessment and Management in Cloud Computing
- ii. Explain in detail Vendor lock in.
- iii. What is Multitenant environment? Explain risk of Multitenant environment
- iv. What is Cloud Malware explain its types.



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**March-April 2024 Examination**

**MCA Sem-IV SY-MCA**

**Cyber Security**

**Subject Code: 91862**

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**Day and Date : Monday, 29-04-2024**

**Total Marks : 70**

**Time : 02:30 pm to 05:00 pm**

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**Q.1 Select an appropriate option from the following.**

**[10]**

1. .... is a type of software designed to help the user's computer detect viruses and avoid them.
  - a. Malware
  - b. Adware
  - c. Antivirus
  - d. Both B and C
  
2. Which one of the following is a type of antivirus program?
  - a. Quick heal
  - b. McAfee
  - c. Kaspersky
  - d. All of the above
  
3. Which of the following can be considered as the elements of cyber security?
  - a. Application Security
  - b. Operational Security
  - c. Network Security
  - d. All of the above

4. The term "TCP/IP" stands for .....
- a. Transmission Contribution protocol/ internet protocol
  - b. Transmission Control Protocol/ internet protocol
  - c. Transaction Control protocol/ internet protocol
  - d. Transmission Control Protocol/ intranet protocol
5. What are the features of cyber security?
- a. Compliance
  - b. Defence against internal threats
  - c. Threat Prevention
  - d. All of the above
6. Which of the following type of text is transformed with the help of a cipher algorithm?
- a. Transformed text
  - b. Complex text
  - c. Scalar text
  - d. Plain text
7. DNS translates a Domain name into
- a. Hex
  - b. Binary
  - c. IP
  - d. URL
8. In order to ensure the security of the data/ information, we need to ..... the data:
- a. Encrypt
  - b. Decrypt
  - c. Delete
  - d. None of the above

9. Which of the following is a type of cyber attack?
- a. Phishing
  - b. SQL Injections
  - c. Password Attack
  - d. All of the above
10. Which of the following do Cyber attackers commonly target for fetching IP address of a target or victim user?
- a. ip tracker
  - b. emails
  - c. websites
  - d. web pages

**Q2 Attempt any three questions.****[15]**

- A. What is Cyberspace? Explain in detail types of cyber threats?
- B. What is Cloud Computing? Explain Cloud Computing Architecture?
- C. Explain in detail Social Network sites security.
- D. Draw and explain Cyber security Architecture.

**Q.3 Attempt any three questions.****[15]**

- A. Explain symmetric key cryptography.
- B. What is firewall? Explain its types & write the limitations of firewall.
- C. Explain intrusion detection system with its types.
- D. What is a honey pot? Explain its types.

**Q.4 Attempt any three questions.**

[15]

- A. What is internet security? Explain Secure Socket Layer (SSL).
- B. What is HTTPS? Explain the Working of HTTPS.
- C. What is S/MIME? Explain its working.
- D. What is email security? What kinds of attacks occur via email? How does encryption protect email?

**Q5. Attempt any three questions.**

[15]

- A. What is cyber law short note? Why do we need cyber laws?
- B. Explain Different Types of Cyber Laws?
- C. Write a short note on The Indian context.
- D. Write a short note on the Indian Penal Code (IPC).

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Total No. of Pages : 4

**March-April 2024 Examination****MCA Sem-IV****Sub: Enterprise Resource Planning****Subject Code : 91865**

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**Day and Date : Thursday, 02-05-2024****Total Marks : 70****Time : 02:30 pm to 05:00 pm**

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**Q.1 Select an appropriate option from the following.****[10]**

- i. What is ERP system?
- a) ERP systems provide a foundation for collaboration between departments
  - b) ERP systems enable people in different business areas to communicate
  - c) ERP systems have been widely adopted in large organizations to store critical knowledge used to make the decisions that drive the organizations performance
  - d) All of the above
- ii. .... are the primary business benefits of an ERP system?
- a) Sales forecasts, sales strategies, and marketing campaigns
  - b) Market demand, resource and capacity constraints, and real-time scheduling
  - c) Forecasting, planning, purchasing, material management, warehousing, inventory, and distribution
  - d) All of the above

- iii .....became the fundamental concept of production management and control.
- a) BOM
  - b) MRP
  - c) ERP
  - d) MRP II
- iv. The ..... should plan well and execute perfectly the implementation of ERP.
- a) Organization
  - b) System developers
  - c) Vendors
  - d) Top Management
- v. In which phase, data conversion is done?
- a) Going live
  - b) Testing.
  - c) Training
  - d) Configuration
- vi. ERP is suitable for .....
- a) Both small and big organizations
  - b) Only big organizations
  - c) Medium scale organizations
  - d) Only small organizations
- vii In the ..... ERP packages were targeted at the manufacturing industry.
- a) 1970's
  - b) 1990's
  - c) 1980's
  - d) 1960's



viii. The Purchase module contains a for accounting and purchasing.

- a) Supplier file
- b) Account file
- c) Sales file
- d) None of the above

ix. .... is the last phase in ERP implementation life cycle

- a) Testing
- b) End user training
- c) Post implementation
- d) Going live

x. The cost of ERP is .....

- a) Depends on the package.
- b) Depends on available resources
- c) Technology used
- d) All the above.

**Q.2 Attempt any three questions**

**[15]**

- a. What is ERP? Discuss the role of ERP
- b. Explain in detail Evolution of ERP
- c. What is the difference between MRP and ERP?
- d. Explain in detail ERP-A manufacturing perspective?

**Q.3 Attempt any three questions**

**[15]**

- a. Explain Business Process Management?
- b. What are the stages of BPM lifecycle?
- c. What are the small, medium and large vendor solutions?

- d. Write a note on
- i) ERP Production Planning Module
  - ii) ERP Marketing Module
  - iii) ERP Financial Module

**Q.4 Attempt any three questions**

[15]

- a. What is data migration? Explain in brief.
- b. Explain ERP implementation life cycle?
- c. What are the stages of selection of ERP systems?
- d. What is ERP implementation methodology? Describe in brief.

**Q.5 Attempt any three questions**

[15]

- a. What are the success factor of ERP implementation?
- b. What is ERP implementation? Explain steps of successful implementation
- c. What are the organizational impact and industrial impact in post implementation?
- d. Explain in detail maintenance of ERP.

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Total No. of Pages : 3

**SY. MCA, Sem. IV,**  
**Examination, March/April, 2024**  
**Sub.: INFORMATION SECURITY**  
**Subject Code : 91864**

.....  
**Day and Date : Monday, 29-04-2024**  
**Time : 2.30 p.m. to 5.00 p.m.**  
.....

**Total Marks : 70**

**Q.1 Select an appropriate option from the following. [10]**

1. .... is a process which verifies the identity of a user who wants to access the system.  
A) Authentication                      B) Non-repudiation  
C) Integrity                                D) None of the above
2. Which algorithm provides the private key and its corresponding public key?  
A) Key generation algorithm  
B) Signature verifying algorithm  
C) Signing algorithm  
D) None of the above
3. Which one of the following is a type of antivirus program?  
A) Quick heal                                B) Mcafee  
C) Kaspersky                                D) All of the above
4. .... is the practice and precautions taken to protect valuable information from unauthorised access, recording, disclosure or destruction.  
A) Network Security                      C) Information Security  
B) Database Security                      D) Physical Security

5. In brute force attack, on average half of all possible keys must be tried to achieve success.
  - A) True
  - B) False
  
6. .... is the practice and precautions taken to protect valuable information from unauthorised access, recording, disclosure or destruction.
  - A) Network Security
  - B) Database Security
  - C) Information Security
  - D) Physical Security
  
7. .... platforms are used for safety and protection of information in the cloud.
  - A) Cloud workload protection platforms
  - B) Cloud security protocols
  - C) AWS
  - D) One Drive
  
8. What is the best defense against social engineering?
  - A) Spyware filters
  - B) Firewalls
  - C) Data leakage protection (DLP)
  - D) Security awareness training
  
9. Identify the term which denotes that only authorized users are capable of accessing the information.
  - A) Confidentiality
  - B) Availability
  - C) Integrity
  - D) Non-repudiation
  
10. Communication between end systems is encrypted using a key, often known as
  - A) temporary key
  - B) section key
  - C) line key
  - D) session key

**Q.2 Attempt any three questions****[15]**

- a. Explain the information security services and attacks
- b. Explain the need for security and security approaches
- c. What is the information security and explain its principles.
- d. Describe current trends in security

**Q.3 Attempt any three questions****[15]**

- a. Solve the Example of Extended Euclidean Algorithm (161, 28)
- b. What is the Authentication And Explain the Types of authentication, Biometric Authentication and Third Party Authentication
- c. Explain the Mathematics of Cryptography
- d. Difference between the Stream cipher and Block cipher

**Q.4 Attempt any three questions****[15]**

- a. What is the Digital Certificate, Define the Steps for Digital Certificate Creation. And Write the Advantages and Disadvantages of Digital Certificate
- b. Introduce Hash functions Properties Algorithm: MDC, MAC, HMAC, MD5, and SHA-512 And write the MD5 algorithm steps
- c. Difference between Private key And Public Key
- d. What is the Certificate Revocation And Explain the X.509 certificate with diagram.

**Q.5 Attempt any three questions****[15]**

- a. Difference between Personal Data Vs. Sensitive Data
- b. What is the SOAP Web Services and write its Advantages and Disadvantages
- c. What is the Rootkit And Note on the Phone Rootkit, Sony XCP Rootkit, TDSS Rootkits



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Total No. of Pages : 3

**Sem. III,**  
**Examination, March/April, 2024**  
**Subject : Internet of Things**  
**Subject Code : 91853**

Day and Date : Monday, 29-04-2024

Total Marks : 70

Time : 10.30 a.m. to 1.00 p.m.

**Instructions :**

- 1) All questions are compulsory
- 2) Figures to the right indicate full marks

**Q1. Select an appropriate option from the following.**

[10]

1. What is the microcontroller used in Arduino UNO?  
A) ATmega32114                      B) AT91SAM3x8E  
C) ATmega2560                      D) ATmega2560
2. The Raspberry Pi is defined as the?  
A) Mini computer                      B) Micro Computer  
C) Mega Computer                      D) Nano Computer
3. An IoT network is a collection of ..... devices.  
A) Signal                      B) Machine to Machine  
C) Interconnected                      D) Network to Network
4. What is Arduino?  
A) Programming language  
B) Image editing software  
C) Open-source electronics platform  
D) Text editor
5. .... are the devices that are able to emit, accept and process data over the network.  
A) Sensors                      B) Edge II  
C) Gateways                      D) Data Acquisition

6. IoT-A reference model is a .....
  - A) Scalable
  - B) Secure
  - C) Both scalable and secure
  - D) Neither scalable nor secure
7. What is the use of the TX pin?
  - A) Upload
  - B) Download
  - C) Ground
  - D) Power input
8. Which operating system Raspberry Pi has?
  - A) Linux
  - B) OpenBSD
  - C) NetBSD
  - D) All of the above
9. Raspberry Pi consists of a ..... quad-core processor/microprocessor.
  - A) 16-bit
  - B) 32-bit
  - C) 64-bit
  - D) 128-bit
10. 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

**Q.2 Attempt any three questions**

[15]

- a. Demonstrate the IoT architectural Reference Model (ARM).
- b. Explain Outline of IOT architecture
- c. What is IoT? Explain using real time example
- d. Explain The Functional view.

**Q.3 Attempt any three questions**

[15]

- a. Explain IOT communication technologies Bluetooth, WiFi, and RFID.
- b. Types of sensor? Explain working principle of radar sensor.
- c. Short note on Arduino Uno IDE
- d. Explain Arduino uno Architecture.

**Q.4 Attempt any three questions**

[15]

- a. Short note on ESP8266 wifi Module.
- b. Interface ESP8266 with Arduino
- c. Explain Web server for IoT
- d. Short not on Wi-Fi libraries in IOT

**Q.5 Attempt any three questions**

[15]

- a. Which Operating System install on Raspberry pi?  
Explain programming of Raspberry Pi with python.
- b. What is Raspberry pi? Explain board of Raspberry pi.
- c. Explain role of Big data in IoT and How do IOT & big data impact each other.
- d. Explain machine learning and cloud computing in IoT? Give Example.

