

Total No. of Questions : 8]

SEAT No. :

P830

[5870] - 1153

[Total No. of Pages : 2

T. E. (Information Technology)
CLOUD COMPUTING

(Elective-II) (2019 Pattern) (Semester-II) (314454 C)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Answer Q.1, or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right side indicate full marks.
- 4) Assume the suitable data, if necessary.

- Q1)** a) Write short note on following standards of application developer [6]
- i) LAMP
 - ii) LAPP
- b) Explain steps to launch an EC2 instance in AWS. [6]
- c) Define Atom and RSS and differentiate between Atom and RSS. [6]

OR

- Q2)** a) Explain SAML and OAuth as standards for Security. [6]
- b) Define Bucket in Amazon S3 and differentiate between DynamoDB and Amazon S3. [6]
- c) Write short note on Windows Azure Platform architecture. [6]

- Q3)** a) Draw & explain General Architecture of Google File System (DFS)? [6]
- b) Discuss the terms: Big Table, HBase and Dynamo cloud data stores in cloud computing. [6]
- c) Discuss the terms Business Continuity and Disaster Recovery in cloud Computing? [5]

OR

- Q4)** a) Draw & explain General Architecture Hadoop Distributed File System (HDFS)? [6]
- b) Differentiate between Big Table and HBase of cloud computing. [6]
- c) What are the General Security Advantages of Cloud-Based Solutions? [5]

P.T.O.

- Q5)** a) Explain Cloud Mashups for Agility & Scalability in detail. [6]
b) Explain Data-Intensive Scalable Computing. Differentiate between Conventional Supercomputer and Data Intensive Scalable Computing. [6]
c) Write a short note on Wireless Sensor Networks (WSN). [6]

OR

- Q6)** a) Explain Social Networking site Twitter. [6]
b) Explain the different Technologies to build IOT infrastructure. [6]
c) Explain the Applications of the Internet of Things. [6]
i) Inventory Management
ii) Route Generation & Scheduling

- Q7)** a) Write a short Note on: Location Aware Application. [6]
b) Explain architecture of mobile cloud computing with diagram. [6]
c) Explain following Concept with diagram: Automatic cloud engine. [5]

OR

- Q8)** a) Draw and Explain multimedia cloud? [6]
b) Explain key issues related to energy efficiency in cloud computing? [6]
c) Explain the Concept of jungle Computing with a diagram? [5]



Total No. of Questions : 8]

SEAT No. :

PA-1512

[Total No. of Pages : 2

[5926]-132

T.E. INFORMATION TECHNOLOGY
(Cloud Computing (EL-II))
(2019 Course) (Semester - II) (314454C)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates :

- 1) Answer Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right side indicates full marks.
- 4) Assume Suitable data if necessary.

- Q1)** a) Explain SAML and OAuth as standards for security. [6]
b) Define Atom and RSS and differentiate between Atom and RSS. [6]
c) Write short note on Windows Azure Platform architecture. [6]

OR

- Q2)** a) Explain steps to launch an EC2 instance in AWS Cloud. [6]
b) Explain Open Cloud Consortium and Open Virtualization format. [6]
c) Define Bucket in Amazon S3 and differentiate between DynamoDB and Amazon S3 [6]
- Q3)** a) Write a Short Note on Simple DB [6]
b) What is fault tolerance. Explain characteristics of fault tolerance. [6]
c) What is disaster recovery? Explain disaster recovery methods. [5]

OR

- Q4)** a) What is Recovery time objectives (RTOs) and Recovery point objectives (RPOs) [6]
b) Draw & explain General Architecture Hadoop Distributed File System (HDFS) [6]
c) List and explain the security issues in cloud [5]

P.T.O.

- Q5)** a) Explain in detail NASA's Nebula Cloud. [6]
b) Explain Supply Chain Management. [6]
c) Explain the concept of FutureGrid. [6]

OR

- Q6)** a) Explain Social Networking site Twitter. [6]
b) Explain the different Technologies to build IOT infrastructure. [6]
c) Explain the Applications of the Internet of Things [6]
i) Inventory Management
ii) Route Generation & Scheduling

- Q7)** a) Draw the Docker architecture and explain the components [6]
b) Discuss in brief: Comet Cloud [6]
c) What's the difference between cloudlets and clouds [5]

OR

- Q8)** a) Draw the kubernetes architecture and explain the components [6]
b) Differentiate between multimedia Vs Mobile Cloud [6]
c) Write a different application of fabric and paints [5]



Total No. of Questions : 8]

SEAT No. :

P829

[5870] - 1152

[Total No. of Pages : 2

T. E. (Information Technology)

CYBER SECURITY

(Semester-II) (2019 Pattern) (Elective-II) (314454 B)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Answer Q.1, or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right side indicate full marks.
- 4) Assume the suitable data, if necessary.

- Q1)** a) What is cyber forensics? Explain different processes in cyber forensics investigation process. [6]
- b) Explain any three challenges faced by Forensic expert in cyber forensics. [6]
- c) Write a short note any two tools for Network forensics analysis. [6]

OR

- Q2)** a) What is Malware Analysis and its key benefits? Explain different types of Malware Analysis. [6]
- b) Explain any three challenges in E-mail Forensics? Explain any three Forensic Investigations techniques used in E-mail Forensic? [6]
- c) How does Computer Forensics differ from data recovery? [6]

- Q3)** a) What is Digital Forensics and its application? Explain any two forensic Hardware/Software tool. [6]
- b) Describe the process followed in preserving the Digital Evidence in Digital Forensic. [5]
- c) What is the role of digital forensics in face and fingerprint recognition?[6]

OR

- Q4)** a) Write a short on following methods used to preserve the evidence in digital forensic before starting the analysis. [6]
- i) Drive Imaging
- ii) Hash Value

P.T.O.

- b) Why do we need digital forensics? Where can digital evidences are found? [5]
- c) Explain any three forensic Tools used in Digital Forensics. [6]

- Q5)** a) Explain Social Engineering attack spiral model with the help of Diagram. [6]
- b) What is mean by Insider Attack? What are types of it? [6]
 - c) What is “Phishing”. And How it works? Explain Phishing Attack with the help of one example. [6]

OR

- Q6)** a) Which all preventive strategies can be used to prevent social engineering attack. [6]
- b) Explain any three Social engineering attacks with example. [6]
 - c) What are the risk associated with social engineers and physical access to computers? [6]

- Q7)** a) Enlist any offences and related punishment under I.T act 2000. [6]
- b) Explain in details Intellectual Property Rights in Cyberspace. [5]
 - c) What are Positive Aspects and weak areas of ITA 2000? [6]

OR

- Q8)** a) What is mean by Security Audit? Explain its Steps. [6]
- b) Write a short note on: [5]
 - i) E-Commerce
 - ii) E-Governance
 - c) Explain the role of Certifying Authority and Controller. [6]



Total No. of Questions : 8]

SEAT No. :

P827

[5870]-1150

[Total No. of Pages : 2

T.E. (I.T.)

**WEB APPLICATION DEVELOPMENT
(2019 Pattern) (Semester - II) (414464A)**

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right indicate full marks.
- 4) Assume suitable data, if necessary.

- Q1)** a) What is MVC? Explain MVC architecture in detail. [6]
b) Explain event binding and property binding in angular with example. [6]
c) Explain different types of Hooks in ReactJS. [6]

OR

- Q2)** a) What is TypeScript? List advantages & disadvantages of using it. [6]
b) What is Pipe? Explain with example. [6]
c) Explain Redux - Architecture in detail. [6]

- Q3)** a) Explain ExpressJS as middleware with example. [5]
b) What is NoSQL? Explain different features of MongoDB. [6]
c) Explain callbacks in NodeJS with suitable example. [6]

OR

- Q4)** a) Explain concept of routes in express with example. [5]
b) Write code to create collection, insert data & delete data in MongoDB using NodeJS. [6]
c) Explain NodeJS events with example. [6]

P.T.O.

- Q5)** a) What is Mobile-First and Mobile Web? List different Mobile Devices. [6]
b) What is jQuery Mobile? Explain Mobile jQuery Framework in detail. [6]
c) Explain any 3 events in jQuery Mobile with example? [6]

OR

- Q6)** a) Compare jQuery with jQuery Mobile. [6]
b) What is jQuery Mobile? What are the advantages and disadvantages of jQuery Mobile? [6]
c) Write a code to create a header and footer in jQuery Mobile. [6]
- Q7)** a) Explain in detail types of Elastic Load Balancer. [6]
b) What are the different components of VPC? [5]
c) What is elastic beanstalk and enlist the advantages of using it? [6]

OR

- Q8)** a) Explain any three AWS Storage services. [6]
b) What is Elastic Load Balancer and explain its working. [5]
c) What is AWS cloud? List different services provided by it. [6]

Total No. of Questions : 8]

SEAT No. :

PA-1509

[Total No. of Pages : 2

[5926]-129

T.E. (Information Technology)
WEB APPLICATION DEVELOPMENT
(2019 Pattern) (Semester - II) (414464A)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Answer four questions.
- 2) Figures to the right indicate full marks.
- 3) Assume suitable data if necessary.
- 4) Neat diagrams must be drawn wherever necessary.

- Q1)** a) List and explain different types of structural directives in Angular. [6]
b) How would you demonstrate the term web framework? Give the reason for using a web framework. [6]
c) What is Angular JS? Explain its features. [6]

OR

- Q2)** a) List and explain the features of any three popular web frameworks. [6]
b) Explain MVC architecture with a suitable diagram. [6]
c) How would you use the term typescript? Give the advantages and disadvantages of using it. [6]

- Q3)** a) List and explain the features of advanced MongoDB. [6]
b) Explain any four methods of console object in node.js with suitable examples. [6]
c) Write a short note on PM2 microservices. [5]

OR

- Q4)** a) Explain the callbacks in node.js with a suitable example. [6]
b) What is the purpose of map reduce? Explain it with a suitable example. [6]
c) Write a short note on Mongoose ODM [5]

P.T.O.

- Q5)** a) Explain the mobile devices and desktop devices in detail. [6]
b) What is j Query? Explain its architecture in detail. [6]
c) What is CDN? How it is powerful in web development? [6]

OR

- Q6)** a) Explain the mobile devices and desktop devices in detail. [6]
b) What is j Query? Is j Query a mobile framework? If yes. explain in brief [6]
c) What is a page? Write a code to create a page in j Query mobile. [6]

- Q7)** a) What is VPC? Explain the components of VPC. [6]
b) What is cloud computing? What are the benefits of cloud computing? [6]
c) List and explain the steps to deploy the application on the elastic beanstalk. [5]

OR

- Q8)** a) What are the storage services provided by AWS? [6]
b) What is S3 bucket and how to create a bucket? [6]
c) What is PuTTY? How to connect the EC2 instance with PuTTY? [5]



Total No. of Questions : 8]

SEAT No. :

P825

[Total No. of Pages : 2

[5870]-1148

T.E. (Information Technology)
COMPUTER NETWORK & SECURITY
(2019 Pattern) (Semester - II) (314451)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *Answer four questions from the following.*
- 2) *Figyres to the right side indicate full marks.*
- 3) *Draw the neat sketches wherever required.*

Q1) a) Explain with diagram layerd architecture & clustered architecture for sensor network. **[9]**

b) Comment on Adhoc Network MAC layer with design issues, Design goal. **[9]**

OR

Q2) a) Explain the issues in designing a Routing protocol for adhoc wirless network. **[9]**

b) Explain different issues and challenges in designing sensor network. **[9]**

Q3) a) What is the importance & need for security and explain network attack. **[8]**

b) Explain different block cipher muscles. **[9]**

OR

Q4) a) Explain distributed denial of service attacks in details **[8]**

b) Explain with suitable examples what do you mean by active attacks & passive attacks. **[9]**

Q5) a) Write a short notes on **[9]**

i) Encryption

ii) Decryption

b) Explain RSA in details **[9]**

OR

P.T.O.

Q6) a) What is digital signature? What are application of digital signature [9]

b) Explain following terms. [9]

i) Cryptography

ii) Symmetric key Cryptography

iii) Asymmetric key Cryptography

Q7) a) Write short notes on [9]

i) Malware

ii) Phishing

iii) MITA attack

b) Elaborate different cyber security polycies in detail and explain different challenges in internet governance. [8]

OR

Q8) a) Explain the term cyber stalking. How to iderty and detect cyber stalking.

b) Explain the types of cyber-crimes.

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Total No. of Questions : 8]

SEAT No. :

P826

[5870] - 1149

[Total No. of Pages : 2

T. E. (Information Technology)
DATA SCIENCE AND BIG DATA ANALYTICS
(2019 Pattern) (Semester - II) (314452)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Answer Q.1, or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right side indicate full marks.
- 4) Assume the suitable data, if necessary.

- Q1)** a) Explain Big data Ecosystem with suitable diagram. [7]
b) Explain anatomy of File read and write in HDFS. [7]
c) Write and explain any two Hadoop shell commands. [4]

OR

- Q2)** a) Explain Map Reduce with proper diagram for word count example. [7]
b) Explain Google file system. [7]
c) Explain ETL processing. [4]

- Q3)** a) Explain different steps in Data Analytics Project Life cycle [7]
b) Draw and explain Architecture of HIVE. [7]
c) Explain different data transformation techniques. [3]

OR

- Q4)** a) Explain different kinds of Big Data Analysis. [7]
b) How data can be ingested in python. Write syntax in python for the same. [7]
c) Explain role of visualization in big data analytics. [3]

- Q5)** a) Explain different techniques of Big Data visualization. [7]
b) Explain challenges in Big data visualization. [7]
c) Write two data visualization functions from matplotlib. [3]

OR

P.T.O.

- Q6)** a) Explain different tools for data visualization. [7]
b) Explain scatter plot, histogram and heat map with example. [7]
c) Write two data visualization functions from seaborn. [3]

- Q7)** a) How Social Media analytics helps in value creation? Explain with suitable examples. [7]
b) Explain in brief data analytics life cycle. [7]
c) Explain big data value terminology. [4]

OR

- Q8)** a) What is text mining? Draw and explain text mining architecture and its use. [7]
b) Explain Big data analytics in research. [7]
c) Explain big data impact on organizations. [4]

Total No. of Questions : 8]

SEAT No. :

PA-1507

[Total No. of Pages : 2

[5926]-127

T.E. (Information Technology)
COMPUTER NETWORK & SECURITY
(2019 Pattern) (Semester-II) (314451)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Answer Q1 or Q2, Q3, or Q4, Q5 or Q6, and Q7 or Q8.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right side indicate full marks.
- 4) Assume suitable data if necessary.

Q1) a) Explain DSDV & AODV protocol in detail. [9]

b) Write a short note on sensor network with classification of protocols used. [9]

OR

Q2) a) Explain design issues and design goal in adhoc network MAC layer. [6]

b) Compare sensor network with adhoc wireless network. [6]

c) Explain with diagram clustered architecture for sensor network. [6]

Q3) a) Explain different block cipher modes. [8]

b) Comment on security principles and security services. [9]

OR

Q4) a) What is importance and need of security?. [5]

b) Explain distributed Denial of service attacks. [6]

c) Explain Electronic Code block (ECB) mode. [6]

Q5) a) Explain difference between symmetric and asymmetric key cryptography. [9]

b) Explain Data Encryption Standards with diagram. [9]

OR

P.T.O.

Q6) a) Explain following terms: [9]

i) Groups

ii) Rings

iii) Prime Numbers

b) Explain diffie Hellman key exchange in detail. [9]

Q7) a) What is cyber terrorism? Write in detail example of cyber terrorism. [8]

b) What is a man-in-the-middle attack (MIM)? Explain in detail. [9]

OR

Q8) a) Explain the term phishing & SQL Injection with suitable example. [8]

b) Explain the term cyber stalking & cyber espionage with suitable example. [9]

Total No. of Questions : 8

SEAT No. :

PA-1508

[Total No. of Pages : 2

[5926]-128

T.E. (Information Technology)

DATA SCIENCE AND BIG DATA ANALYTICS

(2019 Pattern) (Semester-II) (314452)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Answer Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right indicate full marks.
- 4) Assume suitable data, if necessary.

- Q1)** a) i) Explain Google File system and its advantages. [5]
ii) Explain ETL in Big data. [5]
b) Explain Hadoop distributed file system. [8]

OR

- Q2)** a) i) Write 5 Hadoop Shell commands. [5]
ii) Explain Role Job tracker and Task Tracker in Hadoop Architecture. [5]
b) Explain Map Reduce with proper diagram for word count example. [8]

- Q3)** a) Explain different types of Big Data Analysis techniques. [8]
b) i) Explain Different Data Transformation techniques. [3]
ii) What is dataset? Explain with python syntax of 2 different types of dataset used in Big data. [6]

OR

- Q4)** a) i) Explain Mean, Mode and variance and standard deviation with suitable example. [8]
ii) Explain Data Standardization. [3]
b) Draw and explain Architecture of HIVE. [6]

P.T.O.

- Q5)** a) i) How data visualization help Big data Analytics. [4]
ii) List the conventional Data visualization tools. Explain any Two. [6]
b) Explain data visualization with the help of example? What are the advantages of data visualization? [8]

OR

- Q6)** a) Explain any 4 Types of data visualization with example. [8]
b) i) Explain different data visualization tools. [6]
ii) Explain Data Visualization with Tableau. [4]

- Q7)** a) Explain Text mining with example. [8]
b) Explain Big Data Analytics Challenges in brief. [9]

OR

- Q8)** a) Explain four Big Data use cases. [8]
b) Explain types of Mobile Analytics. [9]

