G 5582 (Pages : 2) Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, MAY 2017

Seventh Semester

Branch : Information Technology

IT 010 702—OBJECT ORIENTED MODELLING AND DESIGN

(New Scheme—2010 Admission onwards)

[Improvement/Supplementary]

Time : Three Hours Maximum : 100 Marks

Part A

Answer **all** *questions.*
Each question carries 3 *marks.*

1. What are the differences between links and associations ?
2. List the properties of DFD.
3. Distinguish between dynamic modeling and functional modeling.
4. What is the importance of documentation in designing ?
5. What are the advantages of UML ?

(5 × 3 = 15 marks)

Part B

Answer **all** *questions.*
Each question carries 5 *marks.*

6. Explain how to define role names and qualification for associations.
7. With the help of examples, explain events and event traces.
8. What is analysis ? Give an overview of analysis process.
9. Describe concurrency handling in software applications.
10. Explain the use of case model, with appropriate example.

(5 × 5 = 25 marks)

Part C

Answer **all** *questions.*
Each full question carries 12 *marks.*

11. With the help of graphical representation explain the concept of Generalisation.

Or

12. Explain aggregation, inheritance, grouping constructs and metadata.

Turn over

13. Explain the concepts involved in Dynamic Modeling using a sample dynamic model.

Or

14. Explain the use of data flow diagram with suitable examples. Also explain how it helps in functional modeling ?

15. Consider the ATM application. Discuss the activities for the object oriented analysis of the same.

Or

16. Explain various steps involved in the object analysis of a Railway reservation application.

17. Explain documentation design decisions. Also compare the different methodologies.

Or

18. Explain design algorithms and design optimization with suitable examples.

19. Draw the following UML diagrams for a bank :

    (i) Class diagram.

    (ii) Use case diagram.

    (iii) Activity diagram and

    (iv) Sequence diagram.

Or

20. Explain the implementation model and test model, giving appropriate examples.

(5 × 12 = 60 marks)

G 5597 (Pages : 2) Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, MAY 2017

Seventh Semester

Branch : Information Technology

IT 010 703 – COMPUTER GRAPHICS AND MULTIMEDIA SYSTEMS [IT]

(New Scheme – 2010 Admission onwards)

[Improvement/Supplementary]

Time : Three Hours Maximum : 100 Marks

Part A

Answer **all** *questions.*

Each question carries 3 *marks.*

1. How can computer graphics be used in advertising a product?
2. Define translation of an object in two dimension.
3. What is the drawback of depth buffer method? Suggest ways to overcome the same.
4. List the different QoS parameters in multimedia systems.
5. State the purpose of codec in multimedia.

(5 × 3 = 15 marks)

Part B

Answer **all** *questions.*

Each question carries 5 *marks.*

6. What are the methods present to encode information in a raster system?
7. Show that two successive reflections about any line passing through the origin is equivalent to a single rotation about the origin.
8. Explain Gourad shading scheme with an example.
9. Discuss the properties of waves in brief.
10. Brief the steps in data compression.

(5 × 5 = 25 marks)

Turn over

Part C

Answer **all** *questions.*

Each question carries 12 *marks.*

11. Explain raster scan and random scan displays in detail.

Or

12. Elaborate scan line polygon fill algorithm with an example.

13. Discuss composite 2D transformations with necessary equations.

Or

14. Explain Cohen Sutherland line clipping algorithm with an example.

15. Discuss A-buffer algorithm to remove hidden surfaces in brief.

Or

16. Explain the different colour models with suitable diagrams.

17. Explain the different classification of data streams in multimedia.

Or

18. What is meant by streaming stored multimedia? Explain with necessary diagrams.

19. Explain DVI technology used in multimedia applications.

Or

20. Discuss the following with respect to process management in Multimedia :

    (a) Process states.

    (b) Real time processing requirements.

    (c) Earliest deadline first algorithm.

(2 + 2 + 8 = 12 marks)

[5 × 12 = 60 marks]

G 5611 (Pages : 2) Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, MAY 2017

Seventh Semester

Branch : Information Technology

IT 010 704—INTERNET WORKING [IT]

(New Scheme—2010 Admission onwards)

[Improvement/Supplementary]

Time : Three Hours Maximum : 100 Marks

Part A

Answer **all** *questions.*

Each question carries 3 *marks.*

1. Identify the class of the following internet protocol (IP) address :—
   (a) 14.23.120.8.
   (b) 252.5.15.111.
2. What is ping ? Discuss.
3. How can routers in an autonomous system learn about networks within the autonomous system ?
4. What is reliable multicast ? Discuss.
5. Why should file transport protocols compute a checksum on the file data they receive, even when using a reliable end-to-end stream transfer protocol like TCP ?

(5 × 3 = 15 marks)

Part B

Answer **all** *questions.*

Each question carries 5 *marks.*

6. Explain the principle of connectionless delivery.
7. What values should routing tables contain ? How can those values be obtained ? Discuss.
8. How distance-vector routing algorithm works ?
9. What is a virtual private network (VPN) ? Discuss.
10. Compare file transfer protocol (FTP) and trivial file transfer protocol.

(5 × 5 = 25 marks)

Turn over

Part C

Answer **all** *questions.*
Each question carries 12 *marks.*

11. What is reverse address resolution protocol (RARP) ? Explain with example the working of RARP.

Or

12. (a) "Fragmentation usually occurs at a router somewhere along the path between the datagram source and its ultimate destination". Discuss with an example and diagrammatic illustration. (8 marks)

(b) What are the advantages of doing reassembly at the ultimate destination instead of doing it after the datagram travels across one network ? (4 marks)

13. (a) Illustrate with an example that proxy ARP can be used with three physical networks that are interconnected by two routers. (4 marks)

(b) What is supernetting ? Give example and explain the effect of supernetting on routing. (8 marks)

Or

14. Discuss user datagram protocol (UDP) encapsulation and UDP checksum computation.

15. (a) Explain with example the working of border gateway protocol (BGP). (8 marks)

(b) "BGP is neither a pure distance vector protocol nor a pure link state protocol", Why ? Discuss. (4 marks)

Or

16. How open shortest path first protocol (OSPF) works ? Discuss with an example.

17. (a) List and explain the general characteristics internet protocol (IP) multicasting has. (8 marks)

(b) Explain the process of mapping IP multicast To Ethernet multicast. (4 marks)

Or

18. (a) What is internet group management protocol (IGMP) ? How IGMP works ? Discuss. (8 marks)

(b) How multicast routing differs from conventional routing ? Discuss. (4 marks)

19. Explain with diagrammatic illustration the working of simple mail transfer protocol (SMTP).

Or

20. If quality of service (QoS) is needed, how can an internet protocol (IP) network provide it ? Discuss.

[5 × 12 = 60 marks]

G 5624 (Pages : 2) Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, MAY 2017

Seventh Semester

Branch : Information Technology

IT 010 705 – WEB APPLICATIONS DEVELOPMENT [IT]

(New Scheme – 2010 Admission onwards)

[Improvement/Supplementary]

Time : Three Hours Maximum : 100 Marks

Part A

Answer **all** *questions.*

Each question carries 3 *marks.*

1. List the J2EE web components.
2. Present the task list for building J2EE application.
3. When can a servlet be used? What are its benefits?
4. Sketch the servlet life-cycle.
5. Differentiate session bean and entity bean.

(5 × 3 = 15 marks)

Part B

Answer **all** *questions.*

Each question carries 5 *marks.*

6. Sketch the steps in creating a J2EE application.
7. Summarize the JDBC execution types.
8. Create a JSP page that uses bean to display a cartoon strip.
9. How different is container-managed persistence compared to bean managed? Explain.
10. Write short notes on security issues.

(5 × 5 = 25 marks)

Part C

Answer **all** *questions.*

Each full question carries 12 *marks.*

11. Elaborate in detail, the various components in a J2EE application.

Or

12. Explain creation of data access object in detail.

Turn over

13. What do you mean by JDBC API? Illustrate retrieving data with example.

Or

14. With example, illustrate reading servlet parameters.

15. What are implicit JSP objects? Explain conditional processing with suitable example.

Or

16. Create a JSP page that shows a dynamically calculated sum.

17. Highlight the benefits of Enterprise beans and its types. When do we use message driven bean? Explain.

Or

18. Discuss in detail the life-cycle of entity bean.

19. Write short notes on Java message service and message driven beans.

Or

20. Explain in detail the creation of session beans.

(5 × 12 = 60 marks)

G 5666 **(Pages : 3)** **Reg. No.....**

Name.....

B.TECH. DEGREE EXAMINATION, MAY 2017

Seventh Semester

Branch : Information Technology

IT 010 706 L06 : DATA MINING AND DATA WAREHOUSING (Elective II) [IT]

(New Scheme–2010 Admission onwards)

[Improvement/Supplementary]

Time : Three Hours Maximum : 100 Marks

Part A

Answer **all** *questions.*
Each question carries 3 *marks.*

1. What is metadata ?
2. Define business intelligence.
3. What is an association rule ? List the two interesting measures of an association rule.
4. Explain the need for pruning phase in decision tree construction.
5. Define temporal mining.

(5 × 3 = 15 marks)

Part B

Answer **all** *questions.*
Each question carries 5 *marks.*

6. Differentiate between online transaction processing (OLTP) and online analytical processing (OLAP).
7. Explain the extract, transform and load (ETL) process.
8. What functionality data mining query language support ? Discuss.
9. Explain outlier analysis with an example.
10. What is multidimensional analysis ? Discuss.

(5 × 5 = 25 marks)

Turn over

Part C

Answer **all** *questions.*
Each question carries 12 *marks.*

11. (a) What is a data warehouse and why it is needed ? Explain with example. (6 marks)

(b) Explain with diagrammatic illustration the relationship between operational data, a data warehouse and data marts. (6 marks)

Or

12. (a) What is a multi-dimensional data model ? Explain star schema, snow flake with example and diagrammatic illustration.

13. Explain with diagrammatic illustration the three-tier architecture of a data warehouse.

Or

14. Discuss briefly data warehouse implementation, tuning, testing, deployment and maintenance.

15. Discuss the following with example :

(a) Data cleaning. (4 marks)

(b) Data transformation. (4 marks)

(c) Feature selection. (4 marks)

Or

16. Apply the Apriori algorithm for mining frequent item-sets from the following data set :

Trans ID	Items Purchased
101	Mulberry, Raspberry, Cherry
102	Mulberry, Papaya
103	Papaya, Mango
104	Mulberry, Raspberry, Cherry
105	Passion Fruit, Cherry
106	Passion Fruit
107	Passion Fruit, Papaya
108	Mulberry, Raspberry, Guava, Cherry
109	Guava, Mango
110	Mulberry, Raspberry

The value of minimum support is 0.3 (30%).

17. What is decision tree induction ? Explain classification using decision tree induction with an example.

Or

18. Consider five points {X1, X2, X3, X4, X5} with the following coordinates as a two dimensional sample for clustering :

$X_1 = (1, 3)$; $X_2 = (1, 1)$; $X_3 = (2.5, 1.5)$; $X_4 = (6, 1.5)$; $X_5 = (5, 1.5)$

Illustrate the k-means partitioning algorithm (clustering algorithm) using the above data set. The required number of clusters is two, and initially, clusters are formed from random distribution of samples : $C_1 = \{x_1, x_2, x_4\}$ and $C_2 = \{x_3, x_5\}$.

19. Discuss the following :

(a) Spatial mining. (6 marks)

(b) Text mining. (6 marks)

Or

20. What is web mining ? Explain web structure mining, web content mining and web usage mining.

[5 × 12 = 60 marks]