



MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY **(Autonomous Institution – UGC, Govt. of India)**

Sponsored by CMR Educational Society

(Affiliated to JNTU, Hyderabad, Approved by AICTE - Accredited by NBA & NAAC – „A" Grade - ISO 9001:2015 Certified) Maisammaguda, Dhulapally (Post Via Hakimpet), Secunderabad – 500100, Telangana State, India.
Contact Number: 040-23792146/64634237, E-Mail ID: mrcet2004@gmail.com, website: www.mrcet.ac.in

DEPARTMENT OF INFORMATION TECHNOLOGY

IIIB.TECH IISEMESTER QUESTION BANK 2018-19



LIST OF SUBJECTS

CODE	NAME OF THE SUBJECT
R15A0503	WIRELESS NETWORKS AND MOBILE COMPUTING
R15A0514	COMPUTER NETWORKS
R15A0519	OBJECT ORIENTED ANALYSIS AND DESIGN
R15A0521	SOFTWARE TESTING METHODOLOGIES
R15A0526	DATA WAREHOUSING AND DATA MINING
R15A0529	CLOUD COMPUTING

R15A0503

**WIRELESS NETWORKS AND MOBILE
COMPUTING**

code No: R15A0432

R15

**MALLA REDDY COLLEGE OF ENGINEERING &
TECHNOLOGY**

III B. Tech II Semester Regular Examinations

**WIRELESS NETWORKS AND MOBILE COMPUTING
(Information Technology)**

Time: 3 Hours

Max. Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

Part- A (25 Marks)

- 1.a) List specific features of Bluetooth technology. [2]
- b) Explain about MAC layer. [3]
- c) What are the motivational factors for a specialized MAC? [2]
- d) What is the significance of multiple access with collision avoidance (MACA)? [3]
- e) Define care of address (COA). [2]
- f) Define reverse tunneling. [3]
- g) What is stateful asynchronous mechanism? [2]
- h) What is hybrid broad cast model? [3]
- i) List characteristics of MANET. [2]
- j) What are the memory manager features of Windows CE? [3]

Part-B (50 Marks)

- 2.a) What is the rationale behind using different slot sizes in Bluetooth? Discuss in brief?
 - b) Explain the architecture of Bluetooth system. [5+5]
- OR**
- 3.a) Give a brief note on 2G and 3G.
 - b) Explain HIPERLAN and its characteristics. [5+5]
- 4.a) A TDMA system uses a 270-833 kbps data rate to support eight users per frame
 - i) What is the raw data rate provided for each user?
 - ii) If guard time and synchronization occupy 10.1 kbps determine the traffic efficiency?
 - iii) if (7.4) code is used for error handling, what is overall efficiency?
 - b) What are the countermeasures in SDMA, TDMA, FDMA, and CDMA? [6+4]
- OR**
- 5.a) Explain the term interference in the space time ,frequency time and code domain.
 - b) Is it possible to use a composite TDMA/CDMA scheme? Justify your answer. [5+5]
- 6.a) Explain various requirements of Mobile IP.
 - b) Discuss Generic Routing Encapsulation (GRE). [5+5]

OR

- 7.a) Discuss mobile IPV4 and mobile IPV6.
b) Compare and contrast indirect TCP, snooping TCP, and mobile TCP. [5+5]
- 8.a) Discuss two tier client server architecture with neat sketch.
b) Explain context aware computing. [5+5]

OR

- 9.a) Explain classification of data delivery mechanism.
b) Explain Indexing schemes. [5+5]
- 10.a) Explain security threats in MANETS? Why a MANET faces greater security threats than fixed infrastructure network.
b) Explain in detail Destination Sequence Distance Vector (DSDV). [5+5]

OR

- 11.a) Discuss about mobile agents.
b) Define operating system (OS)? Discuss palm OS. [5+5]

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Code No: R15A0432

R15

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TECHNOLOGY**

III B. Tech II Semester Regular Examinations

**WIRELESS NETWORKS AND MOBILE COMPUTING
(Information Technology)**

Time: 3 Hours

Max. Marks: 75

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Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART- A

(25 Marks)

- 1.a) Mention the challenges of mobile computing. [2]
- b) Differentiate Infrared transmission with radio Transmission. [3]
- c) What is MACAW protocol. [2]
- d) State advantages and disadvantages of CDMA. [3]
- e) State routing between two IP addresses? [2]
- f) Draw the various fields of registration request packet of mobile IP. [3]
- g) What is query processing? [2]
- h) What are the steps involved in retrieving the indexed data frames? [3]
- i) List the properties of MANETs. [2]
- j) What are the advantages in DSR? [3]

PART-B

(50 Marks)

- 2.a) Explain protocol architecture of IEEE802.11.
- b) Discuss the differences between 1G, 2G, 2.5 and 3G mobile communications. [5+5]

OR

- 3.a) Discuss frequencies hopping spread spectrum and direct sequence spread spectrum.
- b) Draw the MAC Frame format and explain its various fields in detail. [5+5]

- 4.a) Compare FDMA and TDMA schemes.
- b) List the functional differences between CDMA and GSM. [5+5]

OR

- 5.a) Explain how MACA protocol avoids hidden exposed terminal problem.
- b) List and Explain the MAC protocols for GSM. [5+5]

- 6.a) Describe mobile TCP. How does a supervisory host send TCP packets to mobile node and to fixed connection?
- b) Explain the pros and cons of DHCP. [6+4]

OR

- 7.a) How does mobile IP works. Explain its architecture.

b) Draw format of mobile IP agent advertisement message. Describe each field in detail.[6+4]

8.a) List what are the hoarding techniques and discuss in detail.

b) Explain push based data delivery mechanisms in detail. [5+5]

OR

9. Explain the following selective tuning techniques.

a) Temporal addressing.

b) Broad cast addressing.

c) Distributed indexed based method. [10]

10.a) Explain destination sequence distance vector routing algorithm in MANETs.

b) Explain memory manager features in Windows CE. [6+4]

OR

11.a) Explain reactive and proactive protocols.

b) Discuss spread spectrum WAP. [5+5]

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R15A0514

COMPUTER NETWORKS

Code No: R15A0514**MALLAREDDY COLLEGE OF ENGINEERING & TECHNOLOGY HYDERABAD****B.Tech III Year II Semester Examinations, February/March - 2016****COMPUTER NETWORKS****(Common to CSE, IT)**

ROLL NO									
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Time: 3 hours**Max. Marks: 75****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit.

Each question carries 10 marks and may have a, b, c as sub questions.

Part- A**(25 Marks)**

- 1.a) What is meant by protocol. [2]
- b) What is piggybacking? [3]
- c) Define bridge. [2]
- d) Describe in brief about Types of Ethernet cabling. [3]
- e) What is virtual circuit? [2]
- f) What are the issues in routing? [3]
- g) Define Tunneling. [2]
- h) List out the socket primitives for TCP. [3]
- i) Define URL. [2]
- j) List out different types of HTML Tags. [3]

Part-B**(50 Marks)**

- 2.a) Write any four reasons for using layered protocols.
- b) Explain the functionality of each layer in OSI reference model. [5+5]

OR

3. Explain in brief about the design issues in the data link layer. [10]
4. Explain the functions of following devices:
 - a) Hub
 - b) Bridge
 - c) Router
 - d) Gateway[3+2+3+2]

OR

- 5.a) What are the functions of medium access control layers protocol? Explain.
- b) Explain IEEE 802.3 standard for Ethernet with the help of frame format. [5+5]
- 6.a) The major problem with distance vector algorithm is 'count to infinity'. How exchange of complete path from router to destination instead of delay, helps in solving count to infinity problem.
- b) What are the advantages of adaptive routing approach over non adaptive routing? [5+5]

OR

7. Describe Dijkstra shortest path algorithm. Also show working of Dijkstra algorithm with the help of an example [10]

- 8.a) Explain in brief about TCP connection establishment and Release.
b) Describe in brief about TCP segment Header. [5+5]

OR

9. Explain the elements of a Transport protocol? [10]

10. What is electronic mail? Describe in brief about sending and receiving e-mail. [10]

OR

- 11.a) Define HTML? Discuss in brief about Common HTML Tags.
b) What is HTTP? Describe in brief about HTTP request methods. [5+5]

CodeNo:R15A0514**MALLAREDDY COLLEGE OF ENGINEERING & TECHNOLOGY HYDERABAD****B. Tech III Year II Semester Examinations, March - 2017****COMPUTER NETWORKS****(Common to CSE, IT)**

ROLL NO										
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Time: 3 hours**Max. Marks: 75****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A**(25 Marks)**

- 1.a) What is the use of datalink layer ? [2]
- b) What is ARP? Explain. [3]
- c) Explain about Broadcast link. [2]
- d) Give the classification of multiple access protocols. [3]
- e) Write any two services network layer provides to transport layer. [2]
- f) Explain about datagram and virtual circuit. [3]
- g) What is internetworking? [2]
- h) List out the internetworking devices. [3]
- i) What is the role of UDP in internet transport protocol? [2]
- j) What is TELENET? [3]

PART-B**(50 Marks)**

2. Explain about various transmission media in physical layer with a neat sketch. [10]
- OR**
3. Elaborate on the design issues of data link layer. [10]
4. Write in detail on Time-Division Multiplexing and Frequency-Division Multiplexing with an example for each. [10]
- OR**
5. Write and explain about various multiple access protocols. [10]
6. Explain the Optimality Principle with a suitable example. [10]
- OR**
7. Explain distance vector routing algorithm. [10]
8. What happens when large packet wants to travel through network with smaller maximum packet size? Explain. [10]
- OR**
9. Explain tree-structured numbering scheme. [10]
10. Explain about RPC with a neat sketch. [10]
- OR**
11. What is DNS? What are the services provided by DNS and explain how it works. [10]

Code No: R15A0514

MALLAREDDY COLLEGE OF ENGINEERING & TECHNOLOGY HYDERABAD

B.Tech III Year II Semester Examinations, November - 2015

COMPUTER NETWORKS

(Common to CSE, IT)

ROLL NO									
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Time: 3 hours

Max. Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A (25 Marks)

- 1.a) What are the issues in data link layer? [2]
- b) How Internet is administered? [3]
- c) What is a switch? [2]
- d) Explain spanning tree bridge. [3]
- e) What is optimality principle? [2]
- f) Explain datagram subnet. [3]
- g) What is crash recovery? [2]
- h) Explain packet fragmentation. [3]
- i) What is electronic mail? [2]
- j) What is TELNET? [3]

PART - B (50 Marks)

- 2.a) Compare OSI and TCP/IP reference model.
 - b) Discuss about Internet standards. [5+5]
- OR**
- 3.a) Describe guided transmission media.
 - b) Explain the algorithm for CRC method of error checking. [5+5]
-
4. In detail, explain the various ALOHA protocols. [10]
- OR**
- 5.a) Explain fast Ethernet and gigabit Ethernet.
 - b) Using hub, bridge, switches and router, build a network and explain the network. [5+5]
-
6. With an example, explain shortest path routing. [10]
- OR**
- 7.a) What is count-to-infinity problem? Explain.
 - b) Explain the congestion prevention policies. [5+5]
-
8. Explain the following protocols:
 - a) RARP

b) DHCP.

[5+5]

OR

9.a) What are the services provided by transport layer to the upper layers?

b) Explain the connection establishment in transport layer

[5+5]

10.a) Explain the real time transport protocol.

b) Explain the TCP transmission policy.

[5+5]

OR

11.a) Explain TCP congestion control.

b) Write short notes on:

i) DNS

ii) FTP.

[5+5]

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Code No: R15A0514

R13

MALLAREDDY COLLEGE OF ENGINEERING & TECHNOLOGY HYDERABAD

B. Tech III Year I Semester Examinations, November/December - 2017

COMPUTER NETWORKS

OR

- 9.a) Illustrate the connection establishment and release in transport layer.
b) How crash recovery is managed at the transport layer? [5+5]
- 10.a) Explain Real-time transport protocol.
9. When user clicks a hyperlink, what are the steps that occur between the user's click and the page being displayed? [5+5]

OR

11. Write short notes on the following: [10]
(a) MIME (b) Audio compression (c) DNS (d) Voice over IP.

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R13**Code No: R15A0514****MALLAREDDY COLLEGE OF ENGINEERING & TECHNOLOGY HYDERABAD****B. Tech III Year I Semester Examinations, November/December - 2016****COMPUTER NETWORKS****(Common to CSE, IT)**

ROLL NO									
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Time: 3 hours**Max. Marks: 75****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A**(25 Marks)**

- 1.a) What is Frame Relay? [2]
- b) Write about communication satellites. [3]
- c) Define time domain reflectometry. [2]
- d) Difference between Pure ALOHA and slotted ALOHA. [3]
- e) Write about Jitter control. [2]
- f) Write down the design issue of network layers. [3]
- g) Write about Tunneling. [2]
- h) What are the concepts of extension header in IPv6? [3]
- i) Compare RPC and RTP. [2]
- j) How does persistence timer is useful in TCP ? [3]

PART - B**(50 Marks)**

2. Explain and demonstrate Selective repeat sliding window Protocol with an example. [10]

OR

- 3.a) Write short notes on Wireless Transmission.
b) Describe in detail about Lightwave transmission. [3+7]

4. What is the purpose of CSMA CD? And Explain it. [10]

OR

4. Explain about the following:
a) Spanning Tree Bridge
b) Remote bridge. [5+5]

6. Write briefly about Congestion control in datagram subnets. [10]

OR

7. Write an example, demonstrate how to make routing table using distance vector

routing. And list down the limitation. [10]

8. How would you describe the operation of Address resolution protocol? [10]

OR

9. Explain in detail about crash recovery. [10]

10. How would you summarize the concepts of E-mail, its architecture and services? [10]

OR

11. Describe in detail about TCP segment header and connection Establishment. [10]

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Code No: R15A0514

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY, HYDERABAD

B. Tech III Year II Semester Examinations

Computer Networks

(Information Technology)

Time: 3 hours

Max Marks: 75

Note: This question paper contains two parts A and B. Part A is compulsory which carries 25 marks.

Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit.

Each question carries 10 marks and may have a, b, c as sub questions.

MODEL PAPER – 1

PART-A(Answer all the Questions)

1. a) Define Protocol, Interface and Peer entity. (2M)
- b) What is Piggybacking technique? (3M)
- c) Explain Token Ring briefly. (2M)
- d) Write Ethernet Cabling Standards. (3M)
- e) What is the purpose of TTL? (2M)
- f) Explain the channel allocation problem. (3M)
- g) Write the operational difference bridge and switch. (2M)
- h) Write short note on RTP. (3M)
- i) Explain the Class of IP addresses. (2M)
- j) Write the TCP header format. (3M)

PART-B

Code No: R15A0514

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY, HYDERABAD

B. Tech III Year II Semester Examinations

Computer Networks

(Information Technology)

Time: 3 hours

Max Marks: 75

Note: This question paper contains two parts A and B. Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

MODEL PAPER – 2

PART-A(Answer all the Questions)

1. a) Explain Internet Standards. (2M)
- b) Explain Character stuffing and Bit stuffing. (3M)
- c) Explain Token Bus briefly. (2M)
- d) Write 802.3 Frame format. (3M)
- e) What is Store and Forward packet switching? (2M)
- f) Explain the Count to infinity problem. (3M)
- g) Write the short note on Admission Control. (2M)
- h) Write short note on RPC. (3M)
- i) Define Tunneling. (2M)
- j) Write the short note on TCP Service model. (3M)

PART-B

2. Explain TCP/IP Protocol Suit with neat sketch. (10M)
- (OR)
3. Explain different kinds of Flow Control Protocols.
4. Explain Pure and Slotted ALOHA in detail. (10M)
- (OR)
- 5.a) Explain Inter Networking Devices in detail.
- b) Explain Spanning tree bridges.
- 6.Explain Shortest Path Routing algorithm and Flooding. (10M)
- (OR)
- 7.Explain Congestion Prevention Policies.
- 8.a) Explain IPV6 header format. (10M)
- b) Explain ARP and RARP.
- (OR)
- 9.a) Explain Transport layer Connection Establishment and Connection Release.
- b) Explain Transport protocol addressing.
10. a) Explain TCP header format.
- b) Explain TCP Congestion Control.

(OR)

(10M)

11. Explain the following.

a) SMTP

b) HTTP

c) DNS

Code No: R15A0514

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY, HYDERABAD
B. Tech III Year II Semester Examinations
Computer Networks
(Information Technology)

Time: 3 hours

Max Marks: 75

Note: This question paper contains two parts A and B. Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

MODEL PAPER – 3

PART-A(Answer all the Questions)

1. a. What is a protocol and a standard? (2M)
- b. What is meant by layered architecture? (2M)
- c. Name Topology types and describe any two? (3M)
- d. Notes on channelization? (3M)
- e. Describe physical layer implementation of Gigabit Ethernet? (3M)
- f. What is masking? (2M)
- g. What is SVC and PVC? (3M)
- h. Write Short notes on hierarchical routing? (3M)
- i. Write short notes on internetwork routing (2M)
- j. What is client server application. (2M)

PART-B

2. Comparison between OSI reference model and TCP\IP reference Model . [10]
(OR)
3. a) Explain error detection using CRC for the following: [10]
Consider a message 110010 represented by the polynomial $M(x) = x^5 + x^4 + x$
and a generating polynomial $G(x) = x^3 + x^2 + 1$ (1101)
b. Explain sliding window protocol.
4. Explain Ethernet physical and MAC sublayer and Ethernet types? [10]
(OR)
5. Explain all the connecting devices? [10]
6. a) Explain distance vector routing with an example? [5+5]
b). Describe count to infinity problem.
(OR)
7. Explain Leaky bucket and token bucket algorithms?

[10]

8.a) Describe classification of IP addresses and explain CIDR. [5+5]

b). Write notes on Packet Fragmentation.

(OR)

9. a) Write notes on transport layer services. [5+5]

b) Describe about transport layer addressing.

10.a) Explain RPC. [5+5]

b). Explain Two way handshake and three way handshake methods.

(OR)

11. Explain the following [10]

a) DNS b) FTP c) SSH d) TELNET e) E-Mail f) HTTP

Code No: R15A0514

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY, HYDERABAD

B. Tech III Year II Semester Examinations

**Computer Networks
(INFORMATION TECHNOLOGY)**

Time: 3 hours Max Marks: 75

Note: This question paper contains two parts A and B. Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

MODEL PAPER – 4

PART-A(Answer all the Questions)

1. a)What are the issues in data link layer ? (2M)
- b)How internet is administered? (3M)
- c) What is a Switch? (2M)
- d) Explain spanning tree bridge. (3M)
- e) What is Optimality Principle? (2M)
- f) Explain datagram subnet . (3M)
- g) What is crash recovery ? (2M)
- h) Explain packet fragmentation. (3M)
- i)What is electronic mail ? (2M)
- j)What is TELNET ? (3M)

PART-B

- 2.a)Compare OSI and TCP/IP reference model. [5+5]
- b)Discuss about internet standards .
- (OR)
- 3.a)Describe guided Transmission media. [5+5]
- b)Explain CRC error detection method.
- 4.Explain various ALOHA Protocols. [10]
- (OR)
- 5.Explain fast Ethernet and Gigabit Ethernet. [10]
- 6.Explain shortest path routing. [10]
- (OR)
- 7.Explain count-to-infinity problem. [10]
- 8.Explain the following protocols [5+5]
- a)RARP b)DHCP
- (OR)
- 9.Explain connection establishment and release in transport layer. [10]
- 10.a)Explain the real time transport protocol. [5+5]
- b)Explain the TCP transmission policy.
- (OR)
- 11.a)Explain TCP congestion control. [5+5]

b) Write short notes on:

i) DNS

ii) FTP

R15A0519

OBJECT ORIENTED ANALYSIS AND DESIGN

Code No: R15A0519

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

Permanently Affiliated to JNTUH, Approved by AICTE-Accredited by NBA & NAAC- A-Grade; ISO 9001:2008 Certified

B.Tech. III Year II Semester Examination**Object Oriented Analysis and Design (IT)**

Time: 3 Hours

Max. Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART- A (Marks 25)

Answer All the Questions

1. List the principles of modeling in UML [2]
- b) Enumerate any six artifacts. [3]
- c) Briefly explain any four standard constraints that apply to generalization relationships. [2]
- d) What are the properties of a well structured object diagram? [3]
- e) Draw a collaboration diagram that specifies the flow of control involved in registering a new student at a school. [2]
- f) Explain the following standards stereotypes that adorn the ends of links. [3]
 - i) Association.
 - ii) Self.
 - iii) Parameter.
- g) What are the characteristics of deployment diagrams? [2]
- h) What are the characteristics of a well- structured model with time and space properties? [3]
- i) Draw a class diagram showing architectural overview of the library system. [2]
- j) For coding the specifications are fetched from which diagrams in the design model. [3]

PART-B (Marks: 5x10=50)

Answer All the Questions (Either (a) or (b))

All Questions Carry Equal Marks

2. Explain the Association, Generalization and Realization relationships. Give suitable examples on which context these relationships are specified. [10]
- OR**
3. a) What are the rules of UML. [5+5]

b) What is meant by dependency and Realization relationships. For what purpose they are used. Give suitable examples to describe their usage.
 4. a) Give a detailed note on stereotypes and tagged vales. [5+5]

b) Enumerate the steps to model different views of a system.
- OR**
5. a) Draw an Object diagram for a company information system. [5+5]

b) Describe forward and Reverse Engineering of an Object diagram.

6. a) What are the contents, common properties and uses of interaction diagrams. [5+5]

b) Define Synchronous and Asynchronous messages. OR

7. Usecase diagrams are essential for managing system requirements. Substantiate this statement.

What is Object flow? Explain. [10]

8. a) Explain the following advanced features of states and transitions. [5+5]

i) Internal Transitions

ii) Concurrent substates

iii) Sequential Substates.

iv) History states.

b) Explain the common properties, common contents and common uses of deployment diagram

OR

9. a) What is the UML approach to process synchronization. [5+5]

b) What is the UML notation for the following?

Explain briefly i) Timing marks ii) Time expressions iii) Timing Constraints.

10. a) List the steps involved while developing a unified library application. [5+5]

b) List and explain the different usecases in the library system.

OR

11. Explain in detail about the following models [10]

i) Analysis model.

ii) Design model.

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**B.Tech. III Year II Semester Examination
Object Oriented Analysis and Design (IT)**

Time: 3 Hours

Max. Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART- A (Marks 25)

Answer All the Questions

1. a) What is the importance of modeling? [2]
- b) Write a short notes on modularity. [3]
- c) Enumerate the steps to model new properties.
- d) Why is it necessary to have a variety of diagrams in a model of a system? [2]
- e) Explain the following standard stereotypes that adorn the ends of links. [3]
 - i) Local
 - ii) Global.
- f) Discuss the significance of activity diagram in object oriented modeling. [2]
- g) Contrast active object vs reactive object. [3]
- h) Discuss the characteristics of a well- structured component diagram. [2]
- i) What are the steps followed while searching and reserving an item?
- j) Define pattern. [3]

PART-B (Marks: 5x10=50)

Answer All the Questions (Either (a) or (b))

All Questions Carry Equal Marks

2. Explain briefly the classification of things with UML notation. [10]
- OR**
3. What is the need of architecture? Explain UML architecture. [10]
 4. Briefly discuss about boundary classes, control classes and entity classes. Give suitable examples for them. [10]
- OR**
5. Enumerate the steps involved in forward engineering and reverse engineering of use case diagrams. [10]
 6. Briefly write about messages and sequencing with an illustrating diagram. [10]
- OR**
7. a) Differentiate between sequence and collaboration diagrams. [5+5]
 - b) Explain forward engineering and reverse engineering in respect of interaction diagrams.
 8. a) What is a signal? Explain with suitable examples. [5+5]
 - b) Define the following.
 - i) State
 - ii) State machine
 - iii) Event

OR

9. a) What is an event? What are different types of events? [5+5]
b) Enumerate the steps to model an API.
10. a) How to model design pattern. [5+5]
b) Describe the modeling of architectural pattern.

OR

11. Explain the concept of forward and reverse engineering artifacts. [10]

Code No: R15A0519

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

Permanently Affiliated to JNTUH, Approved by AICTE-Accredited by NBA & NAAC- A-Grade; ISO 9001:2008 Certified

B.Tech. III Year II Semester Examination**Object Oriented Analysis and Design (IT)**

Time: 3 Hours

Max. Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART- A (Marks 25)

Answer All the Questions

1. a) List some of the advantages of object oriented approach over conventional approach. [2]
- b) What are the application areas of UML? Give any Five. [3]
- c) Enumerate the steps to model non-software things. [2]
- d) What is Class diagram. [3]
- e) What is the significance of Usecases and Collaborations. [2]
- f) Enumerate the properties of a well structural usecase. [3]
- g) Compare substates, nested states, composite states. [2]
- h) Explain forward engineering of a deployment diagram. [3]
- i) What is Framework. [2]
- j) Draw a sequence diagram for the Add title usecase. [3]

PART-B (Marks: 5x10=50)

Answer All the Questions (Either (a) or (b))

All Questions Carry Equal Marks

2. a) Explain the Antisymmetric and Transitive properties of Aggregation. [5+5]
- b) Explain the UML approach to SDLC.

OR

3. a) Explain the importance of modeling. [5+5]
- b) In what way object oriented approach claims to improve the system development process? Explain.
4. a) What are the five constraints applied to association relationships. Explain briefly. [5+5]
- b) Enumerate the steps to model groups of elements.

OR

5. a) Enumerate the steps to model complex views. [5+5]
- b) Define idiom. Enumerate the steps to model new semantics.
6. Explain about the following. [10]
- i) Polymorphism.
- ii) Iterated messages
- iii) Use of Self in messages.

OR

7. a) How branching is represented in activity diagram. Elaborate on it. [5+5]
- b) Can a transition have multiple sources? Discuss suitable examples to support your argument.
8. a) Explain History states. [5+5]
- b) Give the sketch of a state machine for the controller in a Home Security system which is responsible

for monitoring various sensors around the perimeter of the house. Briefly explain.

OR

9. Enumerate the steps to model the distributions of objects. [10]
10. a) Discuss object oriented analysis of Unified Library Application in detail. [5+5]
b) Who are the users involved in library system. Explain the functions performed by each of the users.

OR

11. Explain in detail about the following activities. [10]
- i) Designing user interfaces.
 - ii) Implementation
 - iii) Test and Deployment.

Code No: R15A0519

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

Permanently Affiliated to JNTUH, Approved by AICTE-Accredited by NBA & NAAC- A-Grade; ISO 9001:2008 Certified

B.Tech. III Year II Semester Examination**Object Oriented Analysis and Design (IT)**

Time: 3 Hours

Max. Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART- A (Marks 25)

Answer All the Questions

1. a) What is an artifact? [2]
- b) What are the adornments in the UML? [3]
- c) What is navigation? [2]
- d) Explain the levels of visibility. [3]
- e) What is usecase diagram? [2]
- f) What are interaction diagrams? [3]
- g) What is a component? [2]
- h) What is deployment diagram? [3]
- i) What are the common uses of deployment diagram? [2]
- j) What are the three kinds of components? [3]

PART-B (Marks: 5x10=50)

Answer All the Questions (Either (a) or (b))

All Questions Carry Equal Marks

2. a) What are behavioral things? Explain. [5+5]
- b) What is UML? Where can the UML to be used?
- OR**
3. a) What are the principles of modeling? Explain. [5+5]
- b) Draw the architecture of a software intensive system and explain.
4. a) What are the various kinds of Classifiers? Explain. [5+5]
- b) How to model the seams in a system?
- OR**
5. a) Explain about generalization with an example. [5+5]
- b) Describe interfaces, types and roles with examples.
6. a) Explain about usecases and actions and usecases and flow of events. [5+5]
- b) How to model a flow of control?
- OR**
7. a) Explain sequence diagram with suitable example. [5+5]
- b) How to model the requirements of a system?
8. a) Explain the following: [10]
- i) History states
- ii) Time and Space
- b) How to model an API?

OR

9. a) How to model an embedded system? [10]
b) Differentiate the following:
i) Components and classes
ii) Nodes and components
10. Explain the following: [10]
a) Patterns and architecture
b) Modeling an executable release.

OR

11. Draw the following diagrams for the unified library application [10]
a) Class diagrams
b) Interaction diagrams

Code No: 126EQ**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year II Semester Examinations, October/November - 2016****OBJECT ORIENTED ANALYSIS AND DESIGN****(Common to CSE, IT)****Time: 3 hours****Max. Marks: 75****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A**(25 Marks)**

- 1.a) Discuss the importance of modeling. [2]
- b) Explain the structural things in UML. [3]
- c) Distinguish between interface and class. [2]
- d) Discuss various uses of object diagram. [3]
- e) Explain with an example how to depict an asynchronous message. [2]
- f) Distinguish between action state and activity state. [3]
- g) Distinguish signals and active classes. [2]
- h) How to model life time of an object? [3]
- i) What is meant by framework? [2]
- j) Discuss the significance of patterns. [3]

PART - B**(50 Marks)**

2. State and explain the common mechanisms in the UML. [10]

OR

3. Discuss about modeling a systems architecture. [10]

4. Discuss how classes can be used for modeling the non software things and modeling primitive types. [10]

OR

5. Explain with an example about modeling structured relationships. [10]

6. Explain with an example how to model flow of control by time and flow of control by organization. [10]

OR

7. How to model requirements of a system. Explain with an example. [10]

8. What is meant by state machine? Discuss about sequential substates and history states with an example. [10]

OR

9. Explain about communication and synchronization with a suitable example. [10]

10. Discuss about artifact diagrams. [10]

11. Write the class diagram for the university library application. [10]

---ooOoo---

Code No: 126EQ**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year II Semester Examinations, May - 2017****OBJECT ORIENTED ANALYSIS AND DESIGN****(Common to CSE, IT)****Time: 3 hours****Max. Marks: 75****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A**(25 Marks)**

- 1.a) List the principles of modeling in UML. [2]
- b) What are the four aims of modeling? [3]
- c) Write the steps for modeling distribution. [2]
- d) Define responsibility with an example. [3]
- e) Write the uses of interaction diagram. [2]
- f) What is activity diagram? [3]
- g) Give the graphical representation of messages, links and sequencing of interactions. [2]
- h) Give an example Collaboration diagram and explain. [3]
- i) Define pattern with an example. [2]
- j) What is an use case diagram? [3]

PART - B**(50 Marks)**

- 2.a) Explain about the common division mechanisms of UML in detail.
- b) Discuss the Software development life cycle with a neat diagram. [5+5]

OR

- 3.a) Illustrate the conceptual model of UML in detail.
- b) What is UML? Elaborate the object oriented design with an example. [5+5]

4. Enumerate the steps to model the client-server systems. [10]

OR

- 5.a) Draw and explain the class diagram for an ATM bank system.
- b) Explain about links and associations in detail. [5+5]

6. Draw the complete use case diagram for the library system and explain the relationships and responsibilities of various actors. [10]

OR

7. Draw the usecase diagram and the activity diagram for an online airline reservation system. Summarize the purpose of each usecase, actor, and its importance. Briefly explain various activity states and action states in the activity diagram. [10]

8. Define an event and a signal. Explain briefly about the common modeling techniques of events and signals. [10]

OR

9. Explain the forward engineering tool and reverse engineering tool for a sample code with respect to the state chart diagram. [10]

10. What are the various object participating in the library information system? Explain the object diagram that is associated with various interactions with a neat diagram. [10]

OR

11. Explain “Issuing of a book” operation using collaboration diagram. [10]

Code No: 126EQ**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year II Semester Examinations, December - 2017****OBJECT ORIENTED ANALYSIS AND DESIGN****(Common to CSE, IT)****Time: 3 hours****Max. Marks: 75**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A**(25 Marks)**

- 1.a) What is UML? [2]
- b) Explain annotational things. [3]
- c) Define class with neat sketch. [2]
- d) What is relationship? List the types of relationships? [3]
- e) What is an Usecase? [2]
- f) Write the common uses of class diagram. [3]
- g) Write about event. [2]
- h) Define action states and activity states. [3]
- i) Mention usecase in Library Management system. [2]
- j) List out all diagrams in UML. [3]

PART - B**(50 Marks)**

- 2.a) Explain in detail about SDLC.
 - b) Summarize common mechanisms in UML. [5+5]
- OR**
- 3.a) Explain about the UML architecture.
 - b) Show basic blocks of the UML. [5+5]
- 4.a) Discuss common modeling techniques of class diagram.
 - b) Explain about structural diagrams. [5+5]
- OR**
- 5.a) Discuss about types and roles.
 - b) Define an object. Mention common uses of objects. [5+5]

Explain the following:

- i) Links ii) Messages
 - b) Discuss Interaction diagrams. [6+4]
- OR**
- 7.a) Explain common modeling techniques of sequence diagram.
 - b) Explain the following with an example: [4+6]
 - i) usecase ii) Actor iii) flow of events

- 8.a) Explain about modeling interprocess communication.
b) Compose the state chart diagram for unified library application. [5+5]

OR

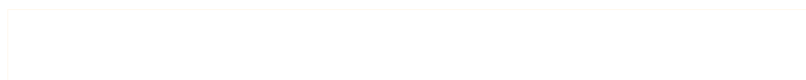
- 9.a) What are components? Show the stereotypes that apply to components.
b) Explain about Deployment diagram with an example. [5+5]

- 10.a) Construct usecase diagram for the Library application.
b) Distinguish between patterns and frameworks. [5+5]

OR

- 11.a) Draw the interaction diagram for login usecase in library application.
b) Compose the activity diagram for library application. [5+5]

---ooOoo---



Code No: 126EQ

R13

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year II Semester Examinations, April - 2018

OBJECT ORIENTED ANALYSIS AND DESIGN

(Common to CSE, IT)

Time: 3 hours

Max. Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A

(25 Marks)

- 1.a) What is the importance of modeling? [2]
- b) Explain why object oriented approach is preferable when compared to other approaches? [3]
- c) What is visibility of an element owned by a package? [2]
- d) What are the steps to model simple collaborations of class diagram? [3]
- e) Distinguish between activity and action state in UML. [2]
- f) Explain briefly about usecase flow of events. [3]
- g) Discuss how to depict iterated and broadcast messages in interaction diagrams. [2]
- h) What are the properties of a well structured component diagrams? [3]
- i) Enumerate steps to model concrete instances in UML. [2]
- j) What is node? How to organize nodes in UML? [3]

PART - B

(50 Marks)

- 2.a) Write about structural things of UML vocabulary. Give UML notation. [5+5]
 - b) What are principles of modelling? Explain. [5+5]
- 3. OR**
- Explain briefly about following terms:
- a) Stereotypes
 - b) Tagged Values
 - c) Constraints [3+3+4]
- 4.a) What is a class diagram? What are the common properties and uses of class diagrams?
 - b) With reference to class diagrams, enumerate the steps to forward engineer. [5+5]
- 5.a) Enumerate steps to model vocabulary of a system.
 - b) Enumerate steps to model distribution of responsibilities in a system. [5+5]

- 6.a) What is meant by usecase? Explain about use case description with an example.
b) State and explain the common modeling techniques of usecase diagrams. [5+5]

OR

- 7.a) Explain about forking and joining concepts in activity diagram with an example.
b) Draw swimlane flowchart for financial accounting template and customize it to show your processes and procedures. [5+5]

- 8.a) How will you model distribution of objects.
b) What is an event? What are different types of events? [5+5]

OR

- 9.a) Enumerate the steps in modeling timing constraints. Illustrate with a UML diagram. Consider an object diagram that models the distribution of certain objects in a real time system. Draw the diagram and explain briefly. [5+5]

- 10.a) Draw an use case diagram for hospital information system aimed at collecting and storing complete information pertaining to the patients.
b) Draw sequence diagram for hospital information system. [5+5]

OR

- 11.a) Draw a diagram that show set of nodes and their relations for library management system.
b) Explain briefly about boundary, control and entity classes. Give suitable examples. [5+5]

R15A0521

SOFTWARE TESTING METHODOLOGIES

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY
DEPARTMENT OF INFORMATION TECHNOLOGY

B. Tech III Year II Semester Examinations
SOFTWARE TESTING METHODOLOGIES
(MODEL PAPER - I)

Time: 3 hours

Max Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART – A

(25 Marks)

1. a) Write any two differences for black box and white box testing. [2]
b) Categorize different kinds of loops and explain briefly. [3]
c) Define a transaction. Give an example. [2]
d) What are dataflow machines? [2]
e) What is the difference between Linear and Nonlinear Boundaries? [3]
f) Write short notes on
(a) Path Products (b) Path Expressions. [2]
g) Reduce the following functions using Karnaugh Map method:
 $F(A,B,C,D) = p(4,5,6,7,8,12,13) + d(1,15)$ [3]
h) Differentiate between good state graphs and bad state graphs. [2]
i) Illustrate the applications of Node Reduction algorithm. [3]
j) What are graph matrices? Explain with an example. [2]

PART – B

(50 Marks)

2. List out various dichotomies and explain. [10]
- (OR)**
3. a) Briefly explain various consequences of bugs.
b) Define Path Sensitization. Explain heuristic procedure for sensitizing paths with the help of an example. [5+5]
4. a) Describe the complications of transaction flows.
b) What are data-flow anomalies? Explain. [5+5]
- (OR)**
5. a) What is meant by Transaction flow testing? Discuss its significance.
b) List 9 possible two letter combinations of the object states of data flow anomalies. Classify them as buggy, suspicious and ok? [5+5]
6. a) What are the restrictions of domain testing? Explain
b) How to test two-dimensional domains? Explain [5+5]

(OR)

7. a) What is the strategy of domain testing? Explain in brief.
b) Discuss about domains and testability. [5+5]
8. Write the steps involved in node reduction procedure. Illustrate all the steps with the help of neat labeled diagrams. [10]

(OR)

9. a) Explain about the mean processing time of a routine with example.
b) Justify the following statement:
“Decision tables can also be used to examine a program structure” [5+5]
10. a) What are the principles of state testing? Explain its advantages and disadvantages.
b) Write about equivalence relation and partial ordering relation. [5+5]

(OR)

11. Write short notes on,
a) Transition bugs
b) Dead states
c) State bugs
d) Encoding bugs [10]

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY**DEPARTMENT OF INFORMATION TECHNOLOGY****B. Tech III Year II Semester Examinations****SOFTWARE TESTING METHODOLOGIES****(MODEL PAPER - II)****Time: 3 hours****Max Marks: 75****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART – A**(25 Marks)**

1. a) What are the goals for testing? [2]
b) List out various consequences of bugs. [3]
c) Define Path Sensitization. [2]
d) What is a data flowgraph? Explain [3]
e) What is Domain Dimensionality? [2]
f) Explain about Ambiguities and Contradictions? [3]
g) Write short notes on:
 (a) Path Sums (b) Loops [2]
h) Explain the Merged Equivalent states? [3]
i) What is a finite state machine? [2]
j) What are the merits and demerits of graph matrix representations? [3]

PART – B**(50 Marks)**

2. Briefly explain about Taxonomy of Bugs. [10]
(OR)
3. a) What are the phases in a Tester's mental life?
b) Explain Link Marker Method of Path Instrumentation. [5+5]
4. a) Define a Transaction. Give an example.
b) How an anomaly can be detected? Explain different types of data flow anomalies and data flow anomaly state graphs. [5+5]
(OR)
5. a) Discuss briefly about Transaction flow testing techniques.
b) Write about the data flow model with example. [5+5]
6. Discuss in detail the nice domains and ugly domains with suitable examples. [10]
(OR)
7. Explain the domain boundary bugs for two dimensional domains. [10]

8. What is decision table and how is a decision table useful in testing? Also explain with the help of an example. [10]

(OR)

9. a) Explain Push/Pop arithmetic with example.
b) What are the rules of Boolean algebra? Explain. [5+5]

10. Explain the following:

- a) Software implementation of state graphs.
b) Applications of graph matrices. [5+5]

(OR)

11. a) Write the design guide lines for building the finite state machine into code.
b) Write about loops in matrix representation. [5+5]

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY**DEPARTMENT OF INFORMATION TECHNOLOGY****B. Tech III Year II Semester Examinations****SOFTWARE TESTING METHODOLOGIES****(MODEL PAPER - III)****Time: 3 hours****Max Marks: 75****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART – A**(25 Marks)**

1. a) Specify on which factors the importance of bug depends. Give metric for it. [2]
b) What is meant by coincidental correctness? [3]
c) Differentiate control flowgraphs and flowcharts. [2]
d) Write short notes on static and dynamic slicing. [3]
e) Differentiate equality predicate and inequality predicate. [2]
f) Write any two applications of regular expressions. [3]
g) What is a decision table? What are the parts of decision table? Explain. [2]
h) Explain briefly about Unreachable states [3]
i) What is a finite state machine? [2]
j) What is degree of a node and density of graphs? [3]

PART – B**(50 Marks)**

2. a) Is complete testing possible? Explain.
b) What are the three kinds of loops? Explain with example. [5+5]
(OR)
3. a) Discuss about different kinds of predicate blindness.
b) Explain the process of achieving (C1+C2) coverage. [5+5]
4. Name and explain data flow testing strategies. [10]
(OR)
5. a) Define transaction flow testing? Explain transaction flow structure.
b) Differentiate between transaction flowgraphs and data flowgraphs. [5+5]
6. Discuss the following terms:
 - a) Linear domain boundaries
 - b) Non-linear domain boundaries
 - c) Complete domain boundaries
 - d) Incomplete domain boundaries [10]

(OR)

7. a) Discuss with suitable examples the equal-span range/Domain compatibility bugs.
b) What are domain bugs? Discuss how to test them. [5+5]

8. Write short notes on,
a) Distributive laws
b) Absorption rule
c) Loops
d) Identity elements [10]

(OR)

9. Write about Haung's theorem. Explain its implementation with example. Explain its generalizations and limitations. [10]

10. Explain the following:
a) Impact of bugs in state testing
b) Number of states in a state graph
c) Properties of relations. [10]

(OR)

11. a) Discuss briefly about good state graphs and bad state graphs.
b) Write about matrix powers and products. [5+5]

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY
DEPARTMENT OF INFORMATION TECHNOLOGY

B. Tech III Year II Semester Examinations
SOFTWARE TESTING METHODOLOGIES
(MODEL PAPER - IV)

Time: 3 hours

Max Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART – A

(25 Marks)

1. a) What are the remedies for test bugs? [2]
- b) What is meant by statement testing and branch testing? [3]
- c) Define Path Instrumentation. [2]
- d) Differentiate transaction flowgraph and data flowgraph. [3]
- e) Write about interior point, boundary point and extreme point. [2]
- f) Write about identity elements. [3]
- g) What are decision table processors? [2]
- h) Explain briefly about impossible states. [3]
- i) What is a state table? [2]
- j) What is a relation matrix and connection matrix? [3]

PART – B

(50 Marks)

2. a) Distinguish the following:
 - i) Function vs Structure
 - ii) The Builder vs Buyerb) How should you go about quantifying the nightmare? Explain. [5+5]
- (OR)**
3. a) Explain about control flowgraphs.
b) What are link counters? Discuss their use in path testing. [5+5]
4. a) How an anomaly can be detected? Explain different types of data flow anomalies and data flow anomaly state graphs. [10]
- (OR)**
5. a) Explain about data flowgraphs.
b) Define the following terms:
 - 1) Definition-clear path segment
 - 2) Loop-free path segment
 - 3) Simple path segment
 - 4) du path [5+5]

6. What is meant by domain testing? Discuss various applications of domain testing. [10]
(OR)
7. a) Discuss testability of domains and interfaces.
b) Explain the domain boundary bugs for one dimensional domains. [5+5]
8. a) Explain about lower path count arithmetic.
b) Explain with an example the four variable KV Charts. [5+5]
(OR)
9. Explain about Regular Expressions and Flow-Anomaly Detection. [10]
10. a) What is finite state machine and a state?
b) Write about building tools of graph matrices. [5+5]
(OR)
11. a) Write all the rules in conversion of specification into a state graph.
b) Write about partitioning algorithm. [5+5]

R15A0526

**DATA WAREHOUSING AND
DATA MINING**

MODEL PAPER - 1

Code No: R15A0526

R 15

MALLA REDDY COLLEGE OF ENGINEERING AND TECHNOLOGY
B. Tech III Year II Semester
Data Warehousing and Data Mining
(Information Technology)

Time: 3 hours

Max Marks: 75

Note: This question paper contains two parts A and B. Part A are compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART-A(Answer all the Questions)

1.
 - a) Write the differences between data warehousing and data mining.(3M)
 - b) Define multi dimensional data mining. (2M)
 - c) State the various views of data warehouse design? (3M)
 - d) Name the steps involved in data mining? (2M)
 - e) Name the pruning strategies in mining closed frequent item sets? (3M)
 - f) List the applications of pattern mining?. (2M)
 - g) Differentiate the supervised and unsupervised learning (2M)
 - h) Write short notes on the back propagation algorithm? (3M)
 - i) State the applications of clustering. (3M)
 - j) Explain briefly about the grid based method (2M)

PART -B

(50 Marks)

2. Write the differences between operational databases and data warehousing? (10M)
OR
3. Explain in detail about the evolution of database technology. (10M)
4. Discuss briefly about multi dimensional data models? (10M)
OR
5. State and explain the methods used for efficient data cube computation(6M)
6. 6. Discuss the FP-Growth algorithm with an example. (10M)
OR
7. Explain how to mine the multidimensional association rules from relational databases and data warehouses?
8. Discuss in detail about the decision tree induction algorithm. (10M)
OR
9. Write in detail about the k-nearest neighbor classifier and case-based reasoning?
10. Define and explain the two hierarchical clustering methods: BIRCH and CHAMELON.(10M)

OR

11 Explain about

a) Statistical-based outlier detection. (5M)

b) Distance-based outlier detection. (5M)

MODEL PAPER – II

Code No: R15A0526

R 15

MALLA REDDY COLLEGE OF ENGINEERING AND TECHNOLOGY
B. Tech III Year II Semester
Data Warehousing and Data Mining
(Information Technology)

Time: 3 hours

Max Marks: 75

Note: This question paper contains two parts A and B. Part A are compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART-A(Answer all the Questions)

- 1.a) Write a short notes about the issues in data mining. (3M)
 - c) Define characterization and discrimination. (2M)
 - d) Explain in short about the virtual data warehouse. (3M)
 - e) Define concept hierarchy. Explain the types of concept hierarchies.(2M)
 - f) Define closed item set and maximal frequent item set. (3M)
 - g) What is an association? Write a short notes about association rule mining.(2M)
 - h) Define regression analysis. .(2M)
 - i) Write a short notes about the attribute selection measures. (3M)
 - j) Write neatly about the data types used in cluster analysis. (3M)
 - j) Write about the density based clustering. (2M)

PART-B

2. Define data mining and explain in detail about the data warehouse architecture with a neat diagram.(10M)

OR

3. What are the primitives that specify the data mining task? Explain in detail about the data smoothing techniques.(10M)

4. Write neatly about different schemas used in multi dimensional data mining with an example for each.(10M)

OR

5. Define ROLAP, MOLAP, and HOLAP. Explain in detail about the efficient methods of data cube computation. (10M)

6. Write and explain the APRIORI algorithm with an example.

OR

7. Write a short notes about the interestingness measures. Discuss about constraint based association rule mining.

8. What measures are used to find best split in Decision Tree Induction algorithm? How Can we improve the scalability in Decision Tree Induction algorithm?(10M)

OR

9. Describe the working procedures of simple Bayesian classifier. Discuss the Back propagation algorithm.

10. Explain in detail about the categories of major clustering methods.(10M)

OR

11. What is an outlier? Explain about (10M)

- a) Distance-based outlier detection
- b) Statistical based outlier detection
- c) Density-based outlier detection.

MODEL PAPER – III

R 15

Code No: R15A0526

MALLA REDDY COLLEGE OF ENGINEERING AND TECHNOLOGY

B. Tech III Year II Semester

**Data Warehousing and Data Mining
(Information Technology)**

Time: 3 hours

Max Marks: 75

Note: This question paper contains two parts A and B. Part A are compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART-A(Answer all the Questions)

- 1) a)What are the advantages of data warehouse? (3M)
- b)Define OLAP. (2M)
- c)List the major issues in data mining. (3M)
- d)List the reasons for using data mining? (2M)
- e)List the reasons for using data mining? (3M)
- f) Define FP-tree? (2M)
- g) What is Hunt's Algorithm? (2M)
- h)What is holdout technique? (3M)
- i)List the requirements of clustering. (3M)
- j) Write in brief about index based algorithms (2M)

PART-B

- 2.Explain the steps for designing and constructing data warehouse? (10M)
OR
- 3.What is data mining? List and describing the motivating challenges of data mining.(10M)
- 4.Discuss in brief about fact table. (10M)
OR
- 5.Explain in detail about transformation? (10M)
6. Explain in detail the construction of FP tree? (10M)
OR
- 7.Discuss in brief about,
a)Maximum frequent item set. (5M)
b)Closed frequent item set. (5M)
- 8 Write notes on evaluating the performance of a classifier?. (10M)
OR
- 9.How a Naive Bays classifier works? Explain with an example? (10M)
10. What is cluster analysis? Explain with suitable Example. (10M)
OR
11. What are different types of hierarchical methods? Explain? (10M)

Code No: 117CD**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year II Semester Examinations, November/December - 2017****DATA WAREHOUSING AND DATA MINING****(Information Technology)****Time: 3 Hours****Max. Marks: 75****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A**(25 Marks)**

- 1.a) Define data warehouse. [2]
- b) List the Data warehouse Characteristics. [3]
- c) How can you go about filling in the missing values for this attribute? [2]
- d) Why is the word data mining a misnomer? [3]
- e) Give a note on Closed Frequent Item Set. [2]
- f) Write the FP-graph algorithm. [3]
- g) How prediction is different from classification? [2]
- h) What is rule classification? [3]
- i) Give a note on k means algorithm. [2]
- j) List the Key Issues in Hierarchical Clustering. [3]

PART – B**(50 Marks)**

- 2.a) Make a comparisons between the MOLAP and HOLAP.
- b) Discuss the star and snowflake schema in detail with suitable example. [5+5]
- 3.a) Write the difference between designing a data warehouse and an OLAP cube.
- b) Give a brief note on ROLAP. [5+5]
- 4.Explain concept hierarchy generation for the nominal data. [10]

OR

- 5.a) Describe the Feature Subset Selection.
- b) Illustrate the Data Transformation by Normalization. [5+5]

6. Make a comparison of Apriori and ECLAT algorithms for frequent item set mining in transactional databases. Apply these algorithms to the following data:

TID	LIST OF ITEMS
1	Bread, Milk, Sugar, TeaPowder, Cheese, Tomato
2	Onion, Tomato, Chillies, Sugar, Milk
3	Milk, Cake, Biscuits, Cheese, Onion
4	Chillies, Potato, Milk, Cake, Sugar, Bread
5	Bread, Jam, Mik, Butter, Chilles

- | | | |
|---|--|------|
| 6 | Butter, Cheese, Paneer, Curd, Milk, Biscuits | |
| 7 | Onion, Paneer, Chilies, Garlic, Milk | |
| 8 | Bread, Jam, Cake, Biscuits, Tomato | [10] |

OR

- | | | |
|----|---|------|
| 7. | Briefly explain the Partition Algorithms. | [10] |
| 8. | Discuss K- Nearest neighbor classification-Algorithm and Characteristics. | [10] |
- OR**
- | | | |
|-------|--|-------|
| 9. | How does the Naïve Bayesian classification works? Explain in detail. | [10] |
| 10.a) | Give a brief note on PAM Algorithm. | |
| b) | What is the drawback of k-means algorithm? How can we modify the algorithm to diminish that problem? | [5+5] |
- OR**
- | | | |
|-----|---|------|
| 11. | What are the different clustering methods? Explain in detail. | [10] |
|-----|---|------|

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Code No: 117CD

R13

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year II Semester Examinations, March - 2017

DATA WAREHOUSING AND DATA MINING

(Information Technology)

Time: 3 Hours

Max. Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

Part- A (25 Marks)

- 1.a) What is a data mart? [2]
- b) What is a fact table? [3]
- c) What is data mining? [2]
- d) List similarity measures. [3]
- e) What is maximal frequent itemset? [2]
- f) How to compute confidence measure for an association rule? [3]
- g) What is classification? [2]
- h) Define information gain. [3]
- i) What is an outlier? [2]
- j) List the demerits of k-means algorithm. [3]

Part-B (50 Marks)

2. What are the various components of data warehouse? Explain their functionality in detail. [10]

OR

3. What is the significance of OLAP in data warehouse? Describe OLAP operations with necessary diagram/example. [10]

4. Explain different data mining tasks for knowledge discovery. [10]

OR

5. What is the need of dimensionality reduction? Explain any two techniques for dimensionality reduction. [10]

6. A database has six transactions. Let min-sup = 50% and min-conf = 75%.

TID	List of items
001	Pencil, sharpener, eraser, color papers
002	Color papers, charts, glue sticks
003	Pencil, glue stick, eraser, pen
004	Oil pastels, poster colours, correction tape
005	Whitener, pen, pencil, charts, glue stick
006	Colour pencils, crayons, eraser, pen

Find all frequent item sets using Apriori algorithm. List all the strong association rules.

- 7.a) What are the advantages of FP-Growth algorithm?
b) Discuss the applications of association analysis. [5+5]
8. Explain decision tree induction algorithm for classifying data tuples and discuss suitable example. [10]
- OR**
- 9.a) What are the characteristics of k-nearest neighbor algorithm?
b) How to evaluate the classifier accuracy? [5+5]
10. What is the goal of clustering? How does partitioning around medoids algorithm achieve this goal? [10]
- OR**
- 11.a) Differentiate between AGNES and DIANA algorithms.
b) How to access the cluster quality? [5+5]

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Code No: 117CD

R13

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year II Semester Examinations, November/December - 2016

**DATA WAREHOUSING AND DATA MINING
(Information Technology)**

Time: 3 Hours

Max. Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART- A

(25 Marks)

- 1.a) Define Data ware housing. [2]
- b) Differentiate OLAP, ROLAP and HOLAP. [3]
- c) Discuss about subset selection [2]
- d) Mention any three measures of Similarity. [3]
- e) Define Association rule mining two step processes. [2]
- f) Write short note on support and confidence measures. [3]
- g) Mention types of classifier techniques. [2]
- h) Define Pre pruning and post pruning. [3]
- i) Discuss on Agglomerative and Divisive clustering techniques. [2]
- j) Mention the various types of clustering methods. [3]

PART-B

(50 Marks)

2. Explain data mining as a step process of knowledge discovery. Mention the Functionalities of Data mining. [10]
- OR**
3. Differentiate Operational database systems and data warehousing. Explain the star schema and fact constellation schemas. [10]
4. Explain the various Data pre-processing techniques. How data reduction helps in data pre-processing. [10]
- OR**
5. How can the data cube be efficiently constructed for discovery-driven Exploration? Explain various operations of a Data Cube. [10]
6. How can we mine multilevel Association rules efficiently using concept hierarchies? Explain. Illustrate with an A-priori algorithm for the given dataset below. [10]

TID	List of items
001	milk, dal, sugar, bread
002	Dal, sugar, wheat,jam
003	Milk, bread, curd, paneer
004	Wheat, paneer, dal, sugar
005	Milk, paneer, bread
006	Wheat, dal, paneer, bread

7. Can we design a method that mines the complete set of frequent item sets without candidate generation? If yes, explain with example table mentioned above. [10]
8. Describe the data classification process with a neat diagram. How does the Naive Bayesian classification works? Explain. [10]
- OR**
9. What is prediction? Explain the various prediction techniques. Explain about Decision tree Induction classification technique. [10]
10. What are outliers? Discuss the methods adopted for outlier detection. [10]
- OR**
11. State K-means algorithm. Apply k-means algorithm with two iterations to form two clusters by taking the initial cluster centers as subjects 1 and 4. [10]

Subject	A	B
1	1.0	1.0
2	1.5	2.0
3	3.0	4.0
4	5.0	7.0
5	3.5	5.0
6	4.5	5.0
7	3.5	4.5

R15A0529
Cloud Computing

Code No: R15A0529

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY**(Autonomous Institution – UGC, Govt. of India)****(Dept of Information Technology)****III B. Tech II Semester Examinations****Cloud Computing**

Roll No									
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Time: 3 hours**Max. Marks: 75****Note:** This question paper contains two parts A and B

Part A is compulsory which carries 25 marks and Answer all questions.

Part B Consists of 5 SECTIONS (One SECTION for each UNIT). Answer FIVE Questions, Choosing ONE Question from each SECTION and each Question carries 10 marks.

PART – A**(25 Marks)**

1.

- (a) List the development in the computer technology depicting platform evolution 2M
- (b) Define the terms Data level parallelism and Task level parallelism. 2M
- (c) Compare hypervisor, para-virtualization and host-based virtualization 3M
- (d) Write short notes on : 1. Memory virtualization 2. I/O virtualization 3M
- (e) Define cloud computing. 2M
- (f) What is SLA in cloud computing? 2M
- (g) List out the advantages of using private cloud computing. 3M
- (h) List out the critical questions towards the convergence of business strategies and IT in the enterprise cloud paradigm 3M
- (i) List the features of Google App Engine 2M
- (j) Elucidate about the pros and cons of the content level security. 3M

PART – B**(50 Marks)****SECTION – I**

- 2 **a** Distinguish and explain various computing paradigms 4M
- b** Illustrate and explain with the neat diagram on a basic cluster architecture. Also explain about resource sharing in clusters 6M

(OR)

- 3 **a** What is SOA? Describe the layered architecture of webservices and Grids, tools and the evolution of SOA 6M
- b** Write a detailed notes on cluster job scheduling methods. 4M

SECTION – II

- 4 **a** What is server consolidation in data centres? Explain. 4M
- b** Discuss in detail about the virtualization ranging from hardware to applications in five abstraction levels 6M

(OR)

- 5 **a** Describe about Cloud OS for Virtualized Data Centers with Eucalyptus as case study. 6M

- b** Explain in detail about the VMM design requirements and providers. 4M

SECTION – III

- 6 a** Explain in detail about the various layers of the cloud computing. 4M
b Explain in detail about the seven step model for migrating into cloud. 6M
(OR)
7 a Explain in detail about the new integration scenarios 6M
b Discuss about the various deployment models of cloud computing. 4M

SECTION – IV

- 8 a** Write notes on virtual management in Amazon Elastic compute cloud 4M
b Explain Aneka resource provisioning service. 6M
(OR)
9 a Discuss in detail about the VM Model and Life cycle with Open Nebula as case study. 6M
b Write notes on virtual management in Eucalyptus 4M

SECTION – V

- 10 a** Discuss about data security risk in cloud computing. 4M
b How do the user collaborate using centralized email communications 6M
(OR)
11 a Explain the tools for Collaborating via Web-Based Communication Tools 6M
b Explain digital identity in cloud computing 4M

Code No: R15A0529

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

(Dept of Information Technology)

III B. Tech II Semester Examinations

Cloud Computing

Roll No									
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Time: 3 hours

Max. Marks: 75

Note: This question paper contains two parts A and B

Part A is compulsory which carries 25 marks and Answer all questions.

Part B Consists of 5 SECTIONS (One SECTION for each UNIT). Answer FIVE Questions, Choosing ONE Question from each SECTION and each Question carries 10 marks.

PART – A

(25 Marks)

1.

- | | | |
|-----|--|----|
| (a) | Define Amdhal's Law. | 2M |
| (b) | Write about elasticity. | 3M |
| (c) | What is CPU virtualization? | 2M |
| (d) | Enumerate the middleware and library support for virtualization | 3M |
| (e) | What are the QoS constraints that are captured in utility computing? | 2M |
| (f) | What is autonomic and utility computing? | 2M |
| (g) | Describe Regular/Cold Migration. | 3M |
| (h) | Describe about provisioning to meet SLA commitments. | 3M |
| (i) | List the strengths of information cards | 3M |
| (j) | What is digital entity? | 2M |

PART – B

(50 Marks)

SECTION – I

- | | | | |
|------|---|--|----|
| 2 | a | Discuss about performance metrics and the dimensions of scalability. | 5M |
| | b | Explain computer clusters and MPP architectures. | 5M |
| (OR) | | | |
| 3 | a | Explain in detail about hypervisor. | 6M |
| | b | Write and explain about P2P network and its major categories. | 4M |

SECTION – II

- | | | | |
|------|---|---|----|
| 4 | a | Explain the levels of virtualization .implementation. | 5M |
| | b | Discuss the virtualization in Linux and Windows platform. | 5M |
| (OR) | | | |
| 5 | a | Explain virtualization support at the OS-level. | 6M |
| | b | Explain para virtualization architecture. | 4M |

SECTION – III

- | | | | |
|---|---|--|----|
| 6 | a | Write the detailed notes on challenges in cloud computing. | 4M |
|---|---|--|----|

- b** Describe in detail about the consumption strategies in Cloud Data Centre. 6M
- (OR)**
- 7 a** What is Virtual Infrastructure Manager(VIM)? Explain the basic and advanced features of the VIMs 5M
- b** Describe the cloud service offerings and deployment models. 5M

SECTION – IV

- 8 a** Explain with neat diagram Eucalyptus architecture 5M
- b** Explain Aneka resource provisioning service. 5M
- (OR)**
- 9 a** Explain in detail about the VM Provisioning and Migration with conVirt . 6M
- b** Write notes on virtual management in OpenNebula 4M

SECTION – V

- 10 a** What is information card? Explain the uses of the card to protect data. 6M
- b** Explain the techniques to collaborate using centralized email communications 4M
- (OR)**
- 11 a** Explain the tools for Collaborating via Web-Based Communication Tools 4M
- b** Explain cloud computing and data security risks 6M
