

C 23521

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Name.....

Reg. No.....

**FOURTH SEMESTER B.TECH. (ENGINEERING) DEGREE [2014 SCHEME]
{REGULAR/SUPPLEMENTARY} EXAMINATION, APRIL 2017**

CS/IT 14 404—OBJECT ORIENTED PROGRAMMING IN JAVA

Time : Three Hours

Maximum : 100 Marks

Part A

Answer any eight questions.

1. What is an array ? Write a program to create an array of 10 integers. Display the average of these elements.
2. Explain the features of JAVA.
3. Describe about object cloning with an example.
4. Explain interface in JAVA. How do interfaces support polymorphism ?
5. Write a program to use 3 threads with synchronization.
6. Explain Thread Life Cycle in detail. Write a code to create Thread in JAVA.
7. Describe about database programming.
8. List the steps to install JDBC.
9. Define polymorphism with example.
10. What are Remote objects ? Explain with example.

(8 × 5 = 40 marks)

Part B

11. Explain the following with examples :
 - (i) Access specifiers.
 - (ii) Catching exceptions.

Or

12. Differentiate String class and String Buffer class with explanation of its methods.
13. Write a program that illustrates interface inheritance. Interface P is extended by P1 and P2. Interface P12 inherits from both P1 and P2. Each interface declares one constant and one method. Class Q implements P12. Instantiate Q and invoke each of its methods. Each method displays one of the constant.

Or

Turn over

14. Explain the working of Applets with an example.
15. Explain briefly about object streams and file management.

Or

16. Discuss about the interthread communication with example.
17. Write short notes on JDBC and its working with an example.

Or

18. What is Remote Method Invocation ? Explain with example.

(4 × 15 = 60 marks)

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**FOURTH SEMESTER B.TECH. (ENGINEERING) DEGREE (2014 SCHEME)
[REGULAR/SUPPLEMENTARY] EXAMINATION, APRIL 2017**

CS/IT 14.403—DATA STRUCTURES AND ALGORITHMS

Time : Three Hours

Maximum : 100 Marks

Part A

Answer any eight questions.

1. Describe enumerated data type with example.
2. Explain time and space complexity of algorithms.
3. What is a Queue ? Explain its operations with example.
4. Explain infix, postfix and prefix expressions with example
5. Explain the operations of Priority Queue.
6. Write notes on Binary search trees.
7. State the difference between B trees and B+ trees
8. Briefly explain the various Hashing techniques.
9. What is meant by collision resolution in Hashing ? Explain in detail any one strategy for dealing with it.
10. Explain Quick Sort Algorithm in detail.

(8 × 5 = 40 marks)

Part B

Answer all questions.

11. Explain the working of recursive algorithms with an example.

Or

12. Explain different types of data structures in detail.
13. Evaluate postfix expression $623+ -382/+*2\$3+$.

Or

14. Find infix and postfix expressions for the following prefix expression. $*-AB+*CD/EF$

Turn over

15. What is binary search tree ? Construct a binary search tree by inserting the following data sequentially 45,32,70,67,21,85,92,40

Or

16. Explain prims algorithm in detail with example.

17. Write the intermediate steps of bubble sort and selection sort of the following :
5, 2, 12, 13, 4, 9, 15, 25, 3.

Or

18. Sort the following numbers using Quick sort procedure and discuss the time complexity and space complexity of this Algorithm : 42,12,-8,98,67,83,08,104,07.

(4 × 15 = 60 marks)

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**FOURTH SEMESTER B.TECH. (ENGINEERING) DEGREE [2014 SCHEME]
(REGULAR/SUPPLEMENTARY) EXAMINATION, APRIL 2017**

CS/IT 14 405—SYSTEMS PROGRAMMING

Time : Three Hours

Maximum : 100 Marks

Part A

Answer eight questions.

1. List components of system software and describe any 4 of them.
2. Draw neat diagram of Foundation of System Programming and explain it.
3. Differentiate Loaders and linkers.
4. List out machine dependent and machine independent loader features.
5. List out and describe basic macro processor functions.
6. What do you mean by macro ? List out any 4 macro calls.
7. What is Operating System ? List out its principles.
8. State the difference between time sharing systems and real time systems.
9. Write notes on virtual machines.
10. What is meant by absolute loader ?

(8 × 5 = 40 marks)

Part B

11. Explain general Design of the assembler.

Or

12. Draw the flowchart of pass-I Assembler and explain in detail.

13. Explain general Design of the loader.

Or

14. Explain in detail about machine dependent and machine independent loader features.

Turn over

15. Explain the structure of Macro Definition Table (MDT) and Argument List Array (ALA) with an example.

Or

16. Explain single pass algorithm of macro processor.

17. With neat diagram, explain Operating System structure.

Or

18. List out different types of operating system and explain it in detail.

(4 × 15 = 60 marks)

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**FOURTH SEMESTER B.TECH. (ENGINEERING) DEGREE [2014 SCHEME]
(REGULAR/SUPPLEMENTARY) EXAMINATION, APRIL 2017**

IT 14.406—DIGITAL DATA COMMUNICATION

Time : Three Hours

Maximum : 100 Marks

Part A*Answer all questions.*

- I. Enumerate the features of Internet.
- Write short notes on different transmission media.
- Distinguish between digital and analog transmission.
- (4) What are linear block codes ?
- What do you mean by multiplexing ?
- Draw the structure of a switch.
- What do you mean by framing ?
- Write short notes on HDLC.
- Explain the need for flow control in networking.
- Differentiate between synchronous transmission and asynchronous transmission.

(8 × 5 = 40 marks)

Part B

- II. Explain in detail about Internet Protocol Standards.

Or

- (b) Discuss in detail about signal propagation delay.

- III. (a) Explain in detail about error detection and correction techniques.

Or

- (b) Elaborate in detail about Hamming codes.

*mult. error
w) regular**VLS, CRC, LRC, checksum.***Turn over**

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2 marks
TSL 70m
IV. ~~(a)~~ Explain in detail about circuit switched networks and datagram networks with suitable diagrams and examples.

Or

(b) Elaborate about the working of Cable TV networks.

V. ~~(a)~~ Explain in detail about protocol for noiseless channels. *simplest 1 step 2 unit.*

Or

(b) Discuss about point to point protocol architecture in detail.

(4 × 15 = 60 marks)

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