2024

(Session : 2022-25)
(Paper ID : 14015)

Time : 3 hours

Full Marks : 80

Candidates are required to give their answers in their own words as far as practicable.

The questions are of equal value.

*Answer any **five** questions.*

1. What are the properties of constructor ? Write a Java program to implement constructor.

2. What is an applet ? What are the various steps in developing an applet ?

3. What are Java packages and how are they used ? Write the steps to implement a user defined package with example program.

4. What is an interface ? Write a Java program to implement interface.

5. What is a StringBuffer in Java and how does it differ from String ?

6. Explain the concept of variables and their types in Java.

7. Explain the concept of Java Virtual Machine (JVM) and its role in Java applications.

8. What is run-time polymorphism in Java ? Explain with an example.

9. Write a program to convert Centigrade temperature into Fahrenheit temperature.

10. Write short notes on any **four** of the following :

    (a) this keyword

    (b) Data type in Java

    (c) final

    (d) new operator

    (e) Thread class

    (f) Applets

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2024

(Session : 2022-25)
(Paper ID : 14016)

Time : 3 hours

Full Marks : 80

Candidates are required to give their answers in their own words as far as practicable.

The questions are of equal value.

Answer any **five** questions.

1. What are bitmap and vector graphics, and how are they different ?

2. What is Direct-View Storage Tubes (DVST) ? Also, explain their advantages and disadvantages.

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3. Explain the difference between raster and vector graphics.

4. Write a Program to draw the Carrom Board.

5. Explain Liquid Crystal Display (LCD).

6. Explain Thin Film Electroluminescent displays

7. Write down the steps involved in DDA line generation algorithm with example.

8. What are the different types of transformations used in computer graphics ?

9. Program to draw an Ellipse using Polynomial Method.

10. Write short notes on any **two** of the following :

   (a) Projection

   (b) Scan fill algorithm

   (c) Raster Scan Display

   (d) Multimedia Hardware

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2024

(Session : 2022-25)
(Paper ID : 14017)

Time : 3 hours

Full Marks : 80

Candidates are required to give their answers in their own words as far as practicable.

The questions are of equal value.

*Answer any **five** questions.*

1. Explain the main functions of an Operating System.

2. Describe the concept of process management in an Operating System.

3. Write a shell script to find the sum of 10 numbers taken from user input.

4. What are system calls and how are they used in an Operating System ?

5. What is a page fault and how does the Operating System handle it ?

6. What are the different types of file systems and their characteristics ?

7. Describe the concepts of multitasking, multiprogramming and multiprocessing.

8. Explain the structure of the Unix Operating System.

9. Explain the use of the 'chmod', 'chown' and 'chgrp' commands in Unix.

10. Describe the 'vi' or 'vim' text editor in Unix . What are some basic commands ?

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2024

(Session : 2022-25)
(Paper ID : 14018)

Time : 3 hours

Full Marks : 80

Candidates are required to give their answers in their own words as far as practicable.

The questions are of equal value.

*Answer any **five** questions.*

1. What do you mean by Software Engineering ? Explain various principles of Software engineering.

2. What is Capability Maturity Model (CMM) ?

3. What is the meaning of fact-finding techniques ? Explain three fact-finding techniques in detail.

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4. Discuss the challenges of software maintenance and how they can be addressed.

5. How do you ensure code quality in a software project ?

6. Discuss the importance of documentation in software engineering.

7. Explain the difference between unit testing and integration testing.

8. What is the use of user interface design ? Write the important guidelines for Graphical User Interface ?

9. Compare and contrast Waterfall model and V-Model.

10. What is the difference between functional and non-functional requirements ?

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