Bachelor of Computer Application (BCA)

5th Semester (Batch 2021-24)

SOFTWARE ENGINEERING

Paper–I

Time Allowed—3 Hours]   [Maximum Marks—75

Note :— Attempt **FIVE** questions in all, selecting at least **ONE** question from each section. The fifth question may be attempted from any section. All questions carry equal marks.

SECTION—A

1. How Iterative Waterfall model of software development overcomes the limitations of Iterative Model ?   15

2. Define Metric. How it is different from Measurement ? Explain Size-Oriented Function Point metrics with suitable example.   15

SECTION—B

3. Define the following concepts using suitable example :

    (a) Problem Analysis

    (b) Data Flow Diagram.   2×7.5=15

4. Explain the following concepts during planning of a software project :

   (a) Effort estimation using COCOMO Model

   (b) Rayleigh Curve. $2 \times 7.5 = 15$

SECTION—C

5. Explain the concept of Structured Programming in detail using suitable example.   15

6. (a) What are the various levels of Testing ? Discuss.

                                                      7

   (b) Differentiate between Functional Testing and Structural Testing.   8

SECTION—D

7. Why the need exists for System Maintenance ? Illustrate different types of software maintenance using suitable examples.   15

8. How Reverse Engineering helps in Software Maintenance ? Explain.   15

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OPERATING SYSTEM

Paper—III

Time Allowed—3 Hours] [Maximum Marks—75

Note :—Attempt FIVE questions in all, selecting at least ONE question from each section. The fifth question may be attempted from any section. All questions carry equal marks.

SECTION—A

1. What is an operating system ? What are its types ?

2. What is meant by a process ? Explain importance of CPU scheduling.

SECTION—B

3. What is critical section problem ? How does semaphore solve it ?

4. Explain segmentation memory management scheme.

SECTION—C

5. Explain the concept of thrashing with example.

6. What is disk scheduling ? How is disk reliability ensured ?

SECTION—D

7. What is deadlock ? Explain how do they occur using a system model.

8. How is avoidance of deadlock done ? Explain with an example.

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WEB TECHNOLOGIES

Paper—II

Time Allowed—3 Hours]   [Maximum Marks—75

Note :—Attempt **FIVE** questions in all, selecting at least **ONE** question from each section. The fifth question may be attempted from any section. All questions carry equal marks.

SECTION—A

1. What role does client side and server side scripting play in web page ? What is difference between both ? Which technologies are used for both ?

2. (a) What advantages does JQuery offer over Java script ?

   (b) What is use of AJAX ? Give an example.

SECTION—B

3. Explain inbuilt functions with examples, related with Strings, Arrays and Files in PHP.

4. Which are session management and error handling features offered by PHP ? Explain both with examples.

SECTION—C

5. What is web hosting ? Which features of web server you will consider before hosting a web site on it ?

6. What is SSL and SSL Certificate ? Give examples where SSL will be required. Also write the steps to host a web site.

SECTION—D

7. Write a detailed note on Emerging Web Technologies used in website design, development and hosting.

8. What is difference between Augmented Reality and Virtual Reality ? Give example of both. How are these used in websites ?

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Subject Code : 1460

Bachelor of Computer Application (BCA)

5ᵗʰ Semester (Batch 2021-24)

JAVA PROGRAMMING LANGUAGE

Paper—IV

Time Allowed—3 Hours] [Maximum Marks—75

Note :—Attempt **FIVE** questions in all, selecting at least **ONE** question from each section. The fifth question may be attempted from any section. All questions carry equal marks.

SECTION—A

1. Explain following terms in reference to Java :

   (a) JVM

   (b) JRE

   (c) Applet

   (d) Immutable String.

2. What is OOPS ? What are advantages of OOPS ?

SECTION—B

3. What is difference between method overloading and method overriding ? What is use of final and super keywords ?

4. What are reasons that Java does not support multiple inheritance in classes ? How can you implement multiple inheritance using interface ? Give an example.

SECTION—C

5. What is Exception handling ? Give an example of try-catch-finally blocks.

6. What is difference between thread and program ? Explain life cycle of thread.

SECTION—D

7. Explain the concept of buffered input and buffered output stream in Java.

8. What is meaning of database connectivity ? What is JDBC ? Write the steps to connect to database using Java program.