

Exam. Code : 117905

Subject Code : 501100

Bachelor of Computer Application (BCA) 5th Sem.

(Batch 2023-26) (CBGS)

SOFTWARE ENGINEERING

Paper : BCA05001T

Time Allowed—3 Hours]

[Maximum Marks—100

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. (a) Discuss the essential characteristics of software components. How do these characteristics help in improving the reliability and scalability of large software systems? 10
- (b) Explain Spiral model in detail. How it handles the risk management during software development process? 10
2. Explain the following Metrics with suitable example :
 - (a) Metrics for software productivity and quality
 - (b) Function-oriented Metrics 2×10=20

SECTION—B

3. Explain the concept of a Software Requirement Specification document. Why is it considered an essential phase in the software development life cycle? Discuss the key characteristics of a good SRS and describe how an SRS helps in reducing ambiguity between clients, users, and developers. 20
4. Explain the role of the following activities in planning a software project :
- (a) Cost Estimation
 - (b) Project Scheduling
 - (c) Rayleigh Curve
 - (d) Quality Assurance Plan 4×5=20

SECTION—C

5. Discuss the role of modularity and structured programming in the coding phase of software development. How do these concepts help in reducing complexity, improving debugging, and enhancing code reusability? Provide examples of how modular coding can be implemented in a project. 20
6. (a) Explain different levels of Testing using suitable examples. 10
- (b) Differentiate between Functional Testing and Structural Testing using examples. 10

SECTION—D

7. System maintenance is often considered more costly and time-consuming than software development itself. Critically evaluate the reasons behind this statement. What strategies can organizations adopt to minimize maintenance costs while ensuring system reliability and performance? 20
8. Corrective maintenance aims at fixing errors reported by users or identified during operations. Discuss the importance of error tracking, debugging techniques, and testing in corrective maintenance. How can improper corrective maintenance practices negatively impact system performance? 20

Exam. Code : 117905
Subject Code : 501101

Bachelor of Computer Application (BCA) 5th Semester
(Batch 2023-26) (CBGS)

WEB TECHNOLOGIES

Paper—BCA05002T

Time Allowed—3 Hours]

[Maximum Marks—100

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. (a) Explain various media tags available in HTML 5.
Give examples.
(b) What is the purpose of style and class attributes?
Explain their use with examples.
2. Is jQuery different than JavaScript? Write a script using jQuery to display a message when a button is clicked.

SECTION—B

3. What is a session? What are cookies? Explain session and cookies management in PHP.

4. What is JDBC? Explain the steps to create database connectivity between PHP and MySQL. Write a PHP script to delete all records from the STUDENT table of MySQL when a button is clicked.

SECTION—C

5. (a) What is the importance of SSL? How is an SSL Certificate obtained?
(b) What is website hosting? Write steps to host a website on a remote server.
6. Explain various emerging web technologies that are useful for a website developer and website user.

SECTION—D

7. What are the advantages and disadvantages of SPA? How is Angular helpful in creating SPA websites?
8. What is the difference between Augmented Reality and Virtual Reality? Give examples of both. How are these used in websites?

Exam. Code : 117905
Subject Code : 501103

Bachelor of Computer Application (BCA) 5th Semester
(Batch 2023-26) (CBGS)

JAVA PROGRAMMING LANGUAGE

Paper—BCA05004T

Time Allowed—3 Hours] [Maximum Marks—100

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. Which are various features of Java that make it a Pure Object-Oriented Language?
2. Explain the following:
 - (a) JVM
 - (b) String Tokenizer Class

SECTION—B

3. What is the difference between method overloading and method overriding? What is the use of the *this* keyword in this context? Give an example of both.

4. What is a user-defined package in Java? What are the advantages of creating packages? Give an example.

SECTION—C

5. What is Exception handling? How does it work in Java? Explain try-catch-finally blocks. Give an example.
6. What is the difference between a process and a thread? Explain the thread life cycle.

SECTION—D

7. What is JDBC? WAP to delete all records of the STUDENT Table of MySQL.
8. What is a stream in Java? Explain the meaning of file input stream and buffered input stream. Give an example of both.

Exam. Code : 117905
Subject Code : 501102

Bachelor of Computer Application (BCA) 5th Semester
(Batch 2023-26) (CBGS)

OPERATING SYSTEM

Paper—BCA05003T

Time Allowed—3 Hours] [Maximum Marks—100

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 are the features of a distributed operating system?
2. Assume there are four processes with arrival time and burst time given. How will you schedule them using (i) FCFS (ii) Shortest Remaining Time?

SECTION—B

3. What is semaphore? How does it solve the synchronization problem?
4. Explain segmentation memory management scheme.

SECTION—C

5. What is demand paging and page replacement?
6. What is disk reliability? What are its challenges?

SECTION—D

7. What is deadlock? How are they characterized?
8. What is deadlock avoidance? How is it done?