

**Exam Code: 107205**

**Paper Code: 5203**

**Programme: Bachelor of Computer Applications**

**Semester-V**

**Course Title: Computer Networks**

**Course Code: BCAL-5111**

**Time Allowed: 3 Hours**

**Max Marks: 60**

**Note:** Attempt five questions in all, selecting atleast one question from each section. The fifth question may be attempted from any section. Each question carries 12 marks.

**Section A**

1. (a) What do you mean by Computer Networks? What is guided and unguided media? Explain the Coaxial Cable. (8)
- (b) Discuss different types of networks. (4)
2. Explain TCP/IP Model and Compare TCP/IP with OSI Model. (12)

**Section B**

3. (a) What are Analog and Digital signals? Explain how to convert Analog signals to Digital signals using the PCM technique. (6)
- (b) Explain Packet switching. (6)
4. What are Error Detection and Correction? How to detect single-bit data Error in Networks. (12)

**Section C**

5. (a) How Token Ring works.
- (b) Explain The Dijkstra Algorithm. (2x6)
6. Differentiate IPV4 and IPV6 and explain in detail the header format of IPV6. (12)

**Section D**

7. What is Cryptography? Explain different Keys used in cryptography. (12)
8. What are the various services provided by UDP? How User Datagram Protocol works to send the data? (12)

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**Exam Code: 107205**  
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**Paper Code: 5204**

**Programme: Bachelor of Computer Application**  
**Semester-V**

**Course Title: Web Technologies (Full Stack Development)**

**Course Code: BCAL-5112**

**Time Allowed: 3 Hours**

**Max Marks: 60**

**Note: Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section. Each question of equal marks (12 Mark).**

**Section A**

1. a) What is JavaScript? Explain its features.  
b) Explain the concept of arrow function in detail.  
(2x6)
2. What is DOM? Explain its structure. List various events in DOM. How events are handled in DOM? (12)

**Section B**

3. Explain the following: -  
a) Function Component

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b) the process of fetching data using API in React. (2x6)

4. Explain methods of mounting phase of React component along with their order of execution. (12)

**Section C**

5. Discuss NPM in detail and explain HTTP and URL module. (12)

6. a) How to upload the file in Node?  
b) How to create database and Collections using Node? (2x6)

**Section D**

7. a) What is Express? How express working with HTTP Methods?  
b) Explain Templating in Express.js. (2x6)

8. How Express application use the Application-level middleware and Built-in middleware? (12)

**Exam Code: 107205**  
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**Paper Code: 5205**

**Programme: Bachelor of Computer Application**  
**Semester-V**

**Course Title: Operating System**

**Course Code: BCAL-5113**

**Time Allowed: 3 Hours**

**Max Marks: 60**

**Note: Attempt five questions selecting at least one from each section. Fifth question can be attempted from any section. Each question carries 12 marks.**

**SECTION-A**

1. Define the terms in detail: Multiprocessing, Multiprogramming, Multitasking, Time Sharing.
2. Define the terms in detail: Distributed system, Real time system, Threads, system calls.

**SECTION-B**

3. What is CPU scheduling? Explain any two algorithms of cpu scheduling in detail with examples.
4. What do you mean by critical section Problem? Which algorithm is best to avoid jumping of processes in critical section? Explain any one in detail.

**SECTION-C**

5. Explain in detail
  - (a) Dead lock Prevention
  - (b) Dead lock avoidance
6. Differentiate between Paging and Segmentation in detail? Explain with diagrams.

**SECTION-D**

7. What do you mean by page fault? Also explain demand paging in detail.
8. Explain
  - (a) Thrashing
  - (b) Disk Scheduling

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**Paper Code: 5206**

**Programme: Bachelor of Computer Application**  
**Semester-V**

**Course Title: Object Oriented Programming-II**

**Course Code: BCAL-5114**

**Time Allowed: 3 Hours**

**Max Marks: 60**

**Note: Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section. Each question is of equal (12 Mark) marks.**

**Section A**

1. (a) Explain the Object-Oriented features of Java and what are the various operators used in Java? (6)  
(b) Difference between Classes and Objects? Explain with example. (6)
2. How to declare a string? How to compare and concatenate the strings with example and also explain string tokenizer. (12)

**Section B**

3. (a) What is Inheritance? Explain different types of Inheritance. (6)

- (b) What is Polymorphism? Explain Runtime Polymorphism with example. (6)
4. What are packages? What are the advantages of using packages and also Explain the process of importing packages in a class. (12)

#### Section C

5. How Exception Handling is done in Java? Explain Exception Handling with try-catch block. (12)
6. What is thread? Explain the life cycle of threads. (12)

#### Section D

7. Write the note on following:  
(a) File input and output stream  
(b) JDBC (2x6)
8. Explain JDBC drivers, steps to connect to the database, connectivity with MYSQL. (12)