

S. S. Jain Subodh PG (Autonomous) College, Jaipur

BCA II Semester, 2026

Operating System BPCA 201

Assignment

All Questions are Compulsory.

Attempt any (4) four questions (1) one from each unit.

Unit I

1. What do you understand by Operating System? Explain its need & services.
2. Explain the following -
 - a) Batch Operating System
 - b) Architecture of OS

Unit II

1. What is Deadlock? How it is prevented.
2. Explain any one Classical Problem of Synchronization.

Unit III

1. Explain the following terms:
 - a. Segmentation
 - b. External Fragmentation
2. Explain various File Allocation Methods.

Unit IV

1. Explain different types of Shells in Linux.
2. Explain the basic commands used in Linux.

S.S. Jain Subodh P.G. College (Autonomous)

BCA II Semester Session 2025-26 Subject – Database Management System (PBCA202) ASSIGNMENT

Note- Attempt 4 questions (selecting one question from each unit).

UNIT-I

Q1. What is File Management System? Explain advantages of DBMS over File System.

Q2. a) Explain different types of DBMS Languages.

b) Explain different types of Data Models.

UNIT- II

Q3. What do you understand by Relational Algebra? Explain its operations from “SET THEORY”.

Q4. Write short notes on –

a) DBMS Generalization

b) DBMS Specialization

c) DBMS Aggregation

UNIT-III

Q5. What is Normalization? Differentiate between 3NF and BCNF normal form in DBMS.

Q6. What do you understand by the term “Deadlock”? Explain any two recovery methods from Deadlock.

UNIT-IV

Q7. Write a short note on Structured Query Language. Explain its different data types and operators.

EMPLOYEE	FNAME	MINIT	LNAME	SSN	BDATE	ADDRESS	SEX	SALARY	SUPERSSN	DNO
	John	B	Smith	123456789	1965-01-09	731 Fondren, Houston, TX	M	30000	333445555	5
	Franklin	T	Wong	333445555	1955-12-08	638 Voas, Houston, TX	M	40000	888885555	5
	Alicia	J	Zelaya	999887777	1968-07-19	3321 Castle, Spring, TX	F	25000	987654321	4
	Jennifer	S	Wallace	987654321	1941-06-20	291 Berry, Belaire, TX	F	43000	888885555	4
	Ramesh	K	Narayan	888884444	1962-09-15	975 Fire Oak, Humble, TX	M	39000	333445555	5
	Joyce	A	English	453453453	1972-07-31	5831 Rice, Houston, TX	F	25000	333445555	5
	Ahmad	V	Jabbar	987987987	1969-03-29	960 Dallas, Houston, TX	M	25000	987654321	4
	James	E	Borg	888885555	1937-11-10	450 Stone, Houston, TX	M	59000	null	1

Q8. Consider this below given table. Create Employee relation and insert atleast 5 records in this.

a) Display all the records having salary greater than 30,000.

b) Display FNAME and BDATE where DNO =5.

S.S. Jain Subodh PG College (Autonomous)

BCA - II Sem.

Subject: Computer Organization & Architecture

Paper Code: PBCA203

Assignment

Attempt Four Questions (Selecting One Question from each Unit)

UNIT – I

Define logic gates. Explain AND, OR, and NOT gates with truth tables.

Explain Multiplexer and Encoder with neat block diagrams.

UNIT – II

What is a flip-flop? Explain SR and D flip-flops with truth tables.

Explain race around condition and how it can be eliminated.

UNIT – III

Explain the Instruction Cycle with a flowchart.

What are computer registers? Explain any three CPU registers.

UNIT – IV

Describe memory hierarchy with a neat diagram.

Explain cache memory and its advantages.

S. S. Jain Subodh PG (Autonomous) College, Jaipur

BCA IV Semester, 2026

Operating System BPCA 401

Assignment

All Questions are Compulsory.

Attempt any (4) four questions (1) one from each unit.

Unit I

1. Explain the following -
 - a) Multitasking Operating System
 - b) Architecture of OS
2. Explain Synchronization.

Unit II

1. Explain the following terms:
 - a. Fragmentation
 - b. Compaction in Memory Management.
2. What do you mean by Paging? Explain Demand Paging.

Unit III

1. What is a File? Explain different File Access Methods.
2. What do you mean by Deadlock Avoidance? Explain Banker's Algorithm with example.

Unit IV

1. What is LINUX? Explain Different features of LINUX.
2. Write a Short Note on Vim Editor in Linux.

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BCA IV Semester

PBCA402: PHP Programming Assignment

Note: Attempt any four questions selecting one from each unit. Each question carries equal marks.

UNIT - I

1. What is server side programming? Explain different features of PHP.
2. Describe in detail about various data types in PHP.

UNIT - II

3. Explain various looping statement supported by PHP with help of suitable example.
4. Write a function that interchange and prints the value of two integers A and B without using any extra variable

UNIT - III

5. Explain with help of proper example about different types of array in PHP.
6. Differentiate between GET and POST methods in PHP.

UNIT - IV

7. What is the difference between session and cookie? Explain with an example.
8. How to create a connection between PHP and My SQL? Explain its step by step procedure

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BCA - IV Sem

Subject: Advanced Database Concepts

Paper Code: BPCA403

Assignment

UNIT – I

- Q1. Define Transaction. Explain ACID properties of the Transaction.
- Q2. Define Concurrency Control? Explain Time Stamp Based Protocols in detail.

UNIT – II

- Q3. Describe Distributed Architecture with suitable diagram.
- Q4. Explain Speed up and Scale up factor in Parallel Systems.

UNIT – III

- Q5. Explain Two-Phase Commit Protocol in detail.
- Q6. Differentiate between Interquery Parallelism and Intraquery Parallelism.

UNIT – IV

- Q7. Describe PL/SQL Block with neat diagram. Explain different Data Types of PL/SQL.
- Q8. Explain Cursor and Trigger in PL/SQL.

S.S. Jain Subodh PG College, Jaipur (Autonomous)

BCA IV Semester

Paper Code- PBCA404

Paper Name – Data Communication and Networking

Assignment March 2026

Instructions to students: - Attempt any **four** questions selecting **at least 1 question from each unit**. Write answer in at least 500 words. Each question carries 2.5 marks.

Unit 1

Q1. (A) Define Network Architecture.

(B) Explain Transmission Mode

Q2. What is topology. Explain all types of topologies in detail.

Unit 2

Q1. Give full explanation of Transmission Media.

Q2. (A) define OSI MODEL. Explain Physical layer in detail.

(B) Explain Multiplexing.

Unit 3

Q1. Explain the Network Layer routing Algorithm.

Q2. Explain any two:-

(A) The Transport Layer

(B) The Presentation Layer

(C) The Session Layer

Unit 4

Q1. Differentiate between TCP/IP and OSI Reference Model in Detail.

Q2. Explain all type of protocols uses in TCP/IP Model.

S. S. JAIN SUBODH P.G COLLEGE, JAIPUR

Affiliated to University of Rajasthan, Jaipur

BCA Semester VI

Paper Code: PBCA 601

Paper Name: Ecommerce Application Development

Assignment March 2026

Instructions to Students: Assignment consist of 8 questions. Students are required to attempt 4 Questions (1 from each Unit).

Max. Marks: 20

Unit - I

- 1) What do you mean by Ecommerce? Explain its advantage and disadvantages.
- 2) Define Scope of Ecommerce and compare Traditional commerce and Ecommerce.

Unit - II

- 3) Explain Ecommerce Model (any two) based on Type of transactions.
- 4) What do you mean by Competitive advantages? Explain competitive force of Portal's model.

Unit – III

- 5) What is EDI? Explain all types of EDI and its standards.
- 6) Explain following
 - a. Electronic Catalogs
 - b. Digital Libraries
 - c. E-governance
 - d. Firewall

Unit – IV

- 7) Explain all types of payment systems.
- 8) What do you mean by Payment Gateway?

S. S. Jain Subodh P.G. College, Jaipur (Autonomous)
Programme- B.C.A. – VI Semester
Paper- BPCA602: Data Warehousing and Data Mining
Assignment, 2026

(Paper setter – Dr. Vaibhav Sharma)

Max. Marks- 20

Note- Attempt four questions, one question from each unit. Write answer in at least 500 words with good presentation.

Unit 1

Q1. What is Data warehousing, Explain various applications in detail.

Q2. Describe Data Warehousing Planning in detail.

Unit 2

Q3. Explain the System Processes of Data Warehousing in detail.

Q4. Describe Schema Concept of Data Warehousing in detail.

Unit 3

Q5. What is data Mart? Explain various types of Data Mart in detail.

Q6. Describe Hardware Architecture of Data Warehousing in detail

Unit 4

Q7. Explain Data Mining Concept in detail with Data Mining Architecture in detail?

Q8. Describe Data Mining methodologies in detail?

S. S. Jain Subodh P.G. College, Jaipur (Autonomous)

Assignment March, 2026

Programme- B.C.A. – VI Semester

Paper- BPCA603: CLOUD COMPUTING

Max. Marks- 20

Note- Attempt four questions, one question from each unit. Write answer in at least 500 words with good presentation.

Unit 1

Q1. Explain the concept of Cloud Computing and discuss its roots in Distributed Systems, Cluster Computing, Grid Computing, and Mobile Computing.

Q2. Describe the fundamental concepts of Distributed Systems and explain how they contributed to the evolution of Cloud Computing.

Unit 2

Q3. Explain the basic concepts and characteristics of Cloud Computing. Why is there a need for Cloud Computing?

Q4. Describe various cloud deployment models (Private, Public, Hybrid, and Community Cloud) and explain Cloud Service models such as RaaS, IaaS, PaaS, and SaaS with examples.

Unit 3

Q5. Explain Resource-as-a-Service (RaaS) and Infrastructure-as-a-Service (IaaS) with reference to the usage of physical resources and virtualization.

Q6. Describe Platform-as-a-Service (PaaS) and Software-as-a-Service (SaaS) with suitable examples .

Unit 4

Q7. Explain resource scheduling in Cloud Computing, including virtual machine provisioning, migration services, and scheduling techniques for resource reservation.

Q8. Discuss cloud applications, challenges, security and privacy issues, and explain Mobile Cloud Computing and integration of Cloud with Wireless Sensor Networks.

S. S. Jain Subodh P.G. College, Jaipur
Assignment March, 2026
Programme- B.C.A. – VI Semester
Paper- BPCA604: Artificial Intelligence and Expert System

Max. Marks- 20

Note- Attempt four questions, one question from each unit. Write answer in at least 500 words with good presentation.

Unit 1

Q1. What is artificial intelligence? Explain various areas of its applications.

Q2. Describe depth first search and breadth first search methods in detail.

Unit 2

Q3. What is heuristic search method? Explain hill climbing method in detail.

Q4. Describe propositional and predicate calculus.

Unit 3

Q5. Explain frames and conceptual dependency.

Q6. Describe Baye's theorem.

Unit 4

Q7. Explain concept of learning. Describe rote learning.

Q8. Discuss stages in the development of an expert system.