

D-211

B.C.A. EXAMINATION, May 2018

(Fourth Semester)

(B. Scheme) (Main & Re-appear)

BCA202B

OPERATING SYSTEM

Time : 3 Hours

[Maximum Marks : 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. (a) What are the major activities of an operating system in regard to file management ? 6

(b) What is Kernel ? What are OS services ? Explain concept of distributed operating systems. 9

2. Explain characteristics of early operating systems. What are batch, multi-programmed and real-time systems ? 15

Unit II

3. (a) What is resource allocation graph ? Describe the mechanisms required for deadlock recovery. 8

(b) Explain the conditions necessary to produce a deadlock. 7

4. What is a process ? What is a process control block ? Give typical contents of PCB. What are light weight processes ? 15

Unit III

5. (a) What is the need of process synchronization ? What is mutual exclusion ? What are the requirements to achieve mutual exclusion ? 9

(b) What is readers-writers problem ? Give solution to this problem using signal and wait. 6

6. (a) What is Paging ? What is the need for this ? Explain hierarchical, hashed and inverted page table organizations. 6

(b) What is Belady's anomaly ? What is solution to avoid such problem ? Explain. 9

Unit IV

7. (a) What is device management ? What are disk access performance parameters ? 9

(b) Describe various directory structures and file system organizations for operating systems. 6

8. Discuss the issues concerning disk scheduling and explain various algorithms available for disk scheduling with the help of suitable examples. 15

8. Write short notes on the following :

(a) Control Structures in PL/SQL

(b) Triggers.

15

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D-212

B.C.A. EXAMINATION, May 2018

(Fourth Semester)

(B. Scheme) (Main & Re-appear)

BCA204-B

RELATIONAL DATABASE

MANAGEMENT SYSTEMS

Time : 3 Hours]

[*Maximum Marks : 75*

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Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit.

Unit I

1. What is Relational data model ? Also write Codd's Rule for Relational data model. 15

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2. Write short notes on the following :
- (a) Relational Calculus
- (b) Domain Calculus. 15

Unit II

3. What is the concept of Normalization ? Also explain 2NF, 3NF and BCNF with suitable examples. 15
4. (a) What is data redundancy ? What are the disadvantages of having redundancy within a database ? 7
- (b) What do you understand by functional dependencies ? Also write characteristics of functional dependencies. 8

Unit III

5. (a) List and explain the basic data types available for attributes in SQL. 9
- (b) List and explain different scheme change statements available in SQL. 6

6. (a) Write SQL update statements to perform the following in the 'Student' table mentioned below : 9

Table : Student

Name	Student_Number	Class	Major
Smith	17	1	CS
Brown	8	2	CS

- (i) Insert a new student, <'Johnson', 25, 1, 'Math'>, in the student table.
- (ii) Change the class of student 'Smith' to 2.
- (iii) Delete the record for the student whose name is 'Smith' and whose student number is 17.
- (b) Briefly describe the concept of referential integrity constraints. 6

Unit IV

7. Write a detailed note on PL/SQL and its execution environment. Also write the advantages of PL/SQL. 15

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D-213

B. C. A. EXAMINATION, May 2018

(Fourth Semester)

(B. Scheme) (Main & Re-appear)

BCA206B

INTRODUCTION TO INTERNET AND WEB
DESIGNING

Time : 3 Hours

[Maximum Marks : 75

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Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

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Unit I

1. (a) What do you mean by a computer network ? Explain various types of computer networks. **8**
- (b) Explain single user, multi-user and client server environment. **7**
2. (a) Explain bus and ring topology with their pros and cons. **8**
- (b) What is World Wide Web ? Explain working of Internet. **7**

Unit II

3. What do you mean by a search engine ? Explain its various components and how a web search engine shows you the desired web page ? **15**
4. Explain the following : **15**
 - (a) URL
 - (b) Video conferencing
 - (c) Working of web browser.

Unit III

5. Explain the following : **15**
 - (a) HTTP
 - (b) Web publishing
 - (c) Client side scripting.
6. What do you mean by a good web design ? Explain various attributes of a good web design. Explain various phases of website development. **15**

Unit IV

7. Write notes on the following : **15**
 - (a) Anchor tag
 - (b) HTML Forms
 - (c) Cascading style sheets.
8. Explain the following : **15**
 - (a) Structure of HTML documents
 - (b) Five HTML tags related to images
 - (c) Frames and layouts.

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Unit IV

7. What are the features of long term capital ?
Discuss the sources of long term debt.
8. Discuss the significance and types of working capital. Which are the determinants of working capital requirement ?

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D-214

B. C. A. EXAMINATION, May 2018

(Fourth Semester)

(B. Scheme) (Main & Re-appear)

BCA208B

BASIC ACCOUNTING

Time : 3 Hours]

[Maximum Marks : 75

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Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. Discuss the scope, advantage and limitations of accounting.
2. Using suitable examples, explain :
 - (a) Capital
 - (b) Liabilities
 - (c) Accounting equations
 - (d) Double entry system.

Unit II

3. Taking a hypothetical example, taking eight transactions, explain their posting in ledgers.
4. Write notes on the following :
 - (a) Purchase book
 - (b) Trial balance.

Unit III

5. Explain the significance and elements of balance sheet.

6. Jupiter Ltd's books showed a bank balance of Rs. 1,54,360. The bank statement showed a different figure. The following differences were detected :

	Rs.
(a) Cheques deposited but not yet credited by bank	1,56,340
(b) Cheques issued but not yet presented for payment	1,76,260
(c) Cheques received by the bank directly	1,46,200
(d) A cheque for Rs. 76,500 deposited in the bank was dishonoured but not yet recorded in cash book.	
(e) Bank charges not yet recorded	1,760
(f) A cheque deposited in bank was wrongly credited by latter in Neptune's account	46,740
(g) Dividend received by the bank not intimated	20,200

Prepare a bank reconciliation statement.

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D-215

B.C.A. EXAMINATION, May 2018

(Fourth Semester)

(B. Scheme) (Main & Re-appear)

OBJECT ORIENTED PROGRAMMING

BCA210B

Time : 3 Hours

[Maximum Marks : 75

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Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit.

(2-53/8) M-D-215

P.T.O.

Unit I

1. (a) What do you mean by programming paradigm ? Discuss how the object Oriented Programming approach is different from the procedure oriented programming approach ? 10
(b) Explain the structure of C++ program. 5
2. Explain the following :
 - (a) Data abstraction
 - (b) Dynamic binding
 - (c) Message Passing. 15

Unit II

3. (a) What do you mean by the dynamic initialization of objects ? Why do we need to do this ? How is dynamic initialization of objects achieved ? 10
(b) Describe the importance of destructors. 5
4. What is Constructor ? How do we invoke a constructor function ? List some of the special properties of constructor functions and discuss the different types of constructors. 15

Unit III

5. Explain the following with example : 15
 - (a) Operator overloading
 - (b) Function overloading
6. Write short notes on the following : 15
 - (a) Virtual functions
 - (b) The pointer
 - (c) Inheritance.

Unit IV

7. What is standard template library ? How is it different from the C++ standard library ? Why is it gaining importance among the programmers ? Explain the components of Standard template library in detail. 15
8. Write short notes on the following :
 - (a) Exception handling mechanism
 - (b) File pointers
 - (c) Class templates. 15