

B.C.A. (Pt.-III)**Data Stru. (Using C/C++)****331****B.C.A. (PART -III) EXAMINATION, 2019**

(Faculty of Science)

101314

(Three-Year Scheme of 10+2+3 Pattern)

DATA STRUCTURE (Using C/C++) - 331

Time Allowed : Three Hours

Maximum Marks : 100

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Question paper consists of three parts.

All **THREE** parts are compulsory.

PART - I : (Very Short Answer) consists of 10 questions of 2 marks each. Maximum limit for each question is upto 40 words.

PART - II : (Short answer) consists of 5 questions of 4 marks each. Maximum limit for each question is upto 80 words.

PART - III : (Long answer) consists of 5 questions of 12 marks each with internal choice.

PART - I

19/20

1. (a) What is data structure ? ✓ 2
- (b) What is LIFO ? ✓ 2
- (c) What is dequeue ? ✓ 2
- (d) How depth first search traversal works ? 2
- (e) How insertion sort and selection sort are different ? 2
- (f) What is doubly linked list ? ✓ 2
- (g) What is binary tree ? 2
- (h) Why do we need to do algorithm analysis ? ✓ 2
- (i) What is hashing ? ✓ 2
- (j) What is the time complexity of quick sort ? ✓ 2

PART - II

18/20

2. Explain the different operations to be performed on the data structures. ✓ 4

3. What is algorithm ? Write the characteristics of algorithm. ✓ 2+2

4. Write the algorithm for insert the element in Binary Search Tree.

4

5. Explain orthogonal representation of graph.

4

6. Explain time complexity of insertion sort.

4

PART - III → 60/60

7. What do you mean by STACK ? Write an algorithm in C to perform PUSH and POP operations. ✓ 4+8

OR

What is an array ? What are different types of array ? Given an array $A[0 : 15]$. If $B = 1000$ and $S = 2$ then calculate the address of $A[10]$. 2+4+6

8. What is Circular Linked List ? Explain the procedures for inserting and deleting nodes from a doubly linked list. ✓ 4+8

OR

Convert EXP : $A + (B * C - (D / E \uparrow F) * G) * H$ into postfix form showing stack status after every step. ✓ 12

9. For a binary tree T, the inorder and postorder travel sequences are as follows : ✓ 12

inorder : D, C, K, E, A, H, B, Q, J, I

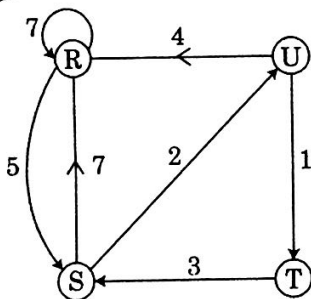
postorder : D, K, E, C, H, Q, J, I, B, A

Draw the binary tree T.

OR

Make a binary search tree of values 80, 40, 150, 100 and 30. 12

10. Consider the weighted graph G. 12



Assume $V_1 = R$, $V_2 = S$, $V_3 = T$ and $V_4 = U$. Find a matrix C which will tell us the lengths of the shortest paths between the nodes.

OR

Write an algorithm for DFS and BFS. ✓ 6+6

11. What is Binary Search ? Write an algorithm for binary search in an ascending order. Write the complexity of Binary Search. ✓ 4+8

OR

Explain the selection sort. Write an algorithm for selection sort. 4+8

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B.C.A. (Part-III)**Sys. Desi. Con.****332****B.C.A. (PART-III) EXAMINATION, 2019**

100731

(Faculty of Science)

(Three-Year Scheme of 10+2+3 Pattern)

SYSTEM DESIGN CONCEPTS - 332

Time Allowed : Three Hours

Maximum Marks : 100

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PART-III: (Long answer) consists of 5 questions of 12 marks each with internal choice.

PART - I

1. (a) What is requirement of system design ? ✓
- (b) Write any three system design techniques. ✓
- (c) Define COCOMO model. —
- (d) Describe the data modeling. ✓
- (e) What is maintenance problem with linear life cycle ? —
- (f) What is testing fundamentals ? —
- (g) What are differences between white box and black box testing ? —
- (h) Write any four characteristics of good management information system. —
- (i) What is the use of computer application in business ? —
- (j) What is system approach ? ✓

10x2=20**PART - II**

2. (a) What is system design ? Explain various techniques of it in brief.
- (b) What is DFD ? Explain DFD notation.
- (c) What do you understand by prototyping ? Write benefits of it.
- (d) What are methods of waterfall cycle ? Explain with example.
- (e) What type of decision support system do we have ?

5x4=20

PART - III

UNIT - I

3. Explain the various system development life cycle. 12

OR

Explain the Object Oriented and Data Oriented approaches in detail. 12

UNIT - II

4. What are the different types of decisions write in detail ? 12

OR

How will be conversion from data flow diagram to structure charts ? Explain. 12

UNIT - III

5. What is testing ? How many types of test cases are there ? Differentiate between white box and black box testing. 12

OR

Write short notes on the following :

3x4=12

- (a) System implementation
- (b) Verification
- (c) Validation

UNIT - IV

6. What is software project planning ? Explain problem-based estimation and process-based estimation in detail. 12

OR

What do you mean by planning ? Differentiate between architectural design and procedural design. 12

UNIT - V

7. How will you implement Management Information System in Computer Application ? Explain in detail. 12

OR

Write short notes on the following :

12

- (a) Analysis
- (b) Evaluation
- (c) Development
- (d) Implementation

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B.C.A. (Part-III)**Net. Tech.****333****B.C.A. (PART-III) EXAMINATION, 2019****101147**

(Faculty of Science)

(Three-Year Scheme of 10+2+3 Pattern)

NETWORKING TECHNOLOGIES - 333

Time Allowed : Three Hours

Maximum Marks : 100

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PART - III : (Long answer) consists of 5 questions of 12 marks each with internal choice.

PART - I

1. Attempt all questions. Each question carries 2 marks.

10x2=20

- (a) Define a network.
- (b) What is IP address ?
- (c) What are the various types of networks ?
- (d) What is the role of a switch in a network ?
- (e) What is the importance of the OSI Physical Layer ?
- (f) What are MAC addresses ?
- (g) What advantages does fiber optics have over other media ?
- (h) What is SMTP ?
- (i) What is IPv6 ?
- (j) What are some drawbacks of implementing a ring topology ?

PART - II

2. Attempt all questions. Each question carries 4 marks.

5x4=20

- ~~(a)~~ Explain the relationship between Band Width and Data Rate.
- ~~(b)~~ Explain different modes of communication.
- ~~(c)~~ Differentiate between Multicast and Broadcast.
- ~~(d)~~ What is the difference between Asynchronous and Synchronous transmission ?
- ~~(e)~~ What basic function does a communication satellite perform ? Give a good reason why up - link and down - link frequencies are not same ?

PART - III

3. (a) Explain different types of Network Topologies with their advantages and disadvantages. 12

OR

(b) Explain different components of data communication network. What is the need of a data communication network ? 10+2=12

4. (a) How does the transport layer ensure that the complete message arrives at the destination, and in the proper order ? 12

OR

(b) Define the term Error detection. Explain Cyclic Redundancy Check (CRC) with example. 12

5. (a) Describe the various layers in TCP/IP. 12

OR

(b) Write short notes on the following : 4x3=12

- ~~(i)~~ SMTP
- ~~(ii)~~ FTP
- ~~(iii)~~ Telnet
- ~~(iv)~~ IPv6

6. (a) Compare between circuit switching and packet switching w.r.t. 4x3=12

- (i) Transmission Delay
- (ii) Path
- (iii) Bandwidth
- (iv) Intermediate Storage

OR

(b) What is multiplexing ? Explain Time division multiplexing with a suitable diagram. What are the advantages of TDM ? 2+4+6

7. (a) Explain characteristics of micro waves and its applications in detail. 12

OR

(b) Describe the structure of an optical fiber and explain the mechanism of light propagation along the fiber. 12

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B.C.A. (Part-III)**334****B.C.A. (Part-III) EXAMINATION, 2019**

(Faculty of Science)

(Three-Year Scheme of 10+2+3 Pattern)

Core Java Programming - 334**101204**

Time Allowed : Three Hours

Maximum Marks : 100

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PART - III : (Long answer) consists of 5 questions of 12 marks each with internal choice.

PART - I

1.
 - (a) Explain object oriented programming.
 - (b) Why do we say that Java is a platform independent language ?
 - (c) What is Multithreading in Java ?
 - (d) Explain Class and Object.
 - (e) What is String Buffer objects in Java ?
 - (f) What is AWT Classes ?
 - (g) What do you understand by Swing in Java ?
 - (h) What is the use of Applet in Java ?
 - (i) Explain Socket in Java.
 - (j) What is the use of Jar file ?

10x2=20**PART - II**

2.
 - (a) Explain some of the important features of Java.
 - (b) What is the use of Inheritance ? Also explain its type.
 - (c) Discuss some of the Event Handling Mechanism in Java.
 - (d) Explain Applet life cycle.
 - (e) Differentiate Inner Class and Sub Class.

5x4=20

PART - III

UNIT - I

- ✓ 3. Discuss the various tools that are used to Create and Run Java Program, with suitable example. 12

OR

Why do we say that Java is a pure object oriented programming language ? Explain by defining most of the supporting feature of OOPs by Java.

UNIT - II

- ✓ 4. Write a program in Java to concatenate (Merge) two string using array. 12

OR

Design a program in Java to implement the different types of inheritance and also write code for handling the exception in that.

UNIT - III

- ✓ 5. Write short notes on the following - 12

- (a) Differentiate paint and repaint in Java Swing.
- (b) Explain Border layout and Grid layout.

OR

- (a) Differentiate Swing and AWT in Java.
- (b) Why Swing is called light weight ?

UNIT - IV

6. Write a program using Java to illustrate the Applet with suitable example. 12

OR

How do we manage Thread in Java ? Also explain Thread Synchronisation and inter-thread communication with suitable example

UNIT - V

- ✓ 7. Write a program to illustrate the use of Socket Programming with suitable example. 12

OR

Why do we use JDBC ? Explain by writing the code in Java with an example.

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B.C.A. (Pt.-III)**E-Comm.****335****B.C.A. (Part - III) EXAMINATION, 2019****100636**

(Faculty of Science)

(Three-Year Scheme of 10+2+3 Pattern)

E-COMMERCE - 335

Time Allowed : Three Hours

Maximum Marks : 100

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PART - I

1. Attempt all questions. Each question carries 2 marks.

10x2=20

- (a) What is E-Commerce ?
- (b) What is Value Chain ?
- (c) What is High-level design ?
- (d) What is Technical Design ?
- (e) What is the role of testing ?
- (f) What do you mean by Validation ?
- (g) What is the role of Credit Card in E-Commerce ?
- (h) Define role of Cyber law in E-Commerce.
- (i) What is M-Wallet ?
- (j) Define Credit Risk.

PART - II

2. Describe the benefits of E-Commerce.

4

3. Explain Client-Server Model in E-Commerce.

4

4. Explain Applying implementation planning in brief.

4

5. Explain Business Ethics in brief.

4

6. Explain electronic payment system.

4

PART - III

7. Define EDI. Explain the architecture of EDI. 12

OR

✓ Discuss B2B, B2C, C2B and C2C model of E-Commerce with suitable example. 12

8. What do you mean by High-level Design ? Explain its conceptual and logical view of High-level design. 12

OR

✓ Describe Client-Server Model of E-Commerce with its characteristics. 12

9. Differentiate between Validation and Verification. Explain the validation process and its types. 12

OR

✓ Explain types of testing use in E-Commerce. 12

10. Describe Electronic Market and its advantage and disadvantage in details. 12

OR

✓ Describe Security Risk of E-Commerce in detail. Explain Cyber law also. 12

11. What is e-banking ? Explain e-banking risk in detail. 12

OR

✓ Write short notes :

(a) Application of M-Commerce 6

(b) Online shopping and payment system via mobile 6

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B.C.A. (Pt.-III)

PHP

336 (B)**B.C.A. (Part -III) EXAMINATION, 2019**

(Faculty of Science)

(Three-Year Scheme of 10+2+3 Pattern)

100829**PHP - 336 (B)**

Time Allowed : Three Hours

Maximum Marks : 100

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PART - I

1. (a) Explain how to submit a form without a submit button ?
- (b) What is the difference between the functions unlink and unset ?
- (c) What is a session ?
- (d) Which protocols is used to describe and locate web services ?
- (e) Give any two applications of ajax ?
- (f) What is cookies ?
- (g) What is server space hiring ?
- (h) How do you pass a variable by value in PHP ?
- (i) What does a special set of tags < ? = and ? > do in PHP ?
- (j) What do you mean by ODBC ?

10x2=20**PART - II**120

2. Write short note on soap.

5x4=20

3. What is constructors and destructors ?

4. Describe looping statements in PHP.

5. Differentiate cookies and sessions.

6. What is the difference between get and post methods ?

PART - III

7. (a) Explain the features of PHP ? Explain the evolution of PHP. 2x6=12

(b) What do you mean by operator ? Explain all the operators of PHP.

OR

(a) Define PHP. Differentiate between server side programming and client side programming. 2x6=12

(b) Explain the various data types supported by PHP environment.

8. (a) Explain for loop, while loop, do while loop with their syntax and examples. 2x6=12

(b) Explain with suitable examples numeric and associative array in PHP.

OR

What is switch statement in PHP ? Explain with their syntax and examples. 12

9. Write a PHP code to perform factorial of a number using recursion function. 12

OR

What is regular expression ? Write a program to search a particular character from a string. 12

10. Write short note on the following : 3x4=12

(a) Variables

(b) Session management

(c) \$_GET and \$_POST

OR

What is the method of web hosting and domain name registration ? Explain. 12

11. Design a web page that accepts inputs (username and password) and authenticate the username and password from a given database using PHP. 12

OR

Write short note on :

2x6=12

(a) Database handling

(b) Setting query parameter

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