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B.C.A. (Part-III) Examination, 2023

SOFTWARE ENGINEERING

Paper - BCA-301

Time : 3 Hours]

[Maximum Marks : 70

Section-A

(Marks : 2 × 10 = 20)

Note :- Answer all *ten* questions (Answer limit 50 words). Each question carries 2 marks.

Section-B

(Marks : 4 × 5 = 20)

Note :- Answer all *five* questions. Each question has internal choice (Answer limit 200 words). Each question carries 4 marks.

Section-C

(Marks : 10 × 3 = 30)

Note :- Answer any *three* questions out of five (Answer limit 500 words). Each question carries 10 marks.

Section-A

- (i) What is Software Process ?
- (ii) Define SRS Component.
- (iii) What is COCOMO ?
- (iv) What is Coupling ?

- (v) Define Metrics.
- (vi) What is Debugging ?
- (vii) Define Alpha Testing.
- (viii) What is CBSE ?
- (ix) What is UML ?
- (x) Define Aggregation.

Section-B

2. What is Prototype ? Draw the schematic diagram of prototype model of software development and describe its phases.

Or

What are the major phases in the spiral model of software development ? Explain.

3. Define model level concept of cohesion.

Or

Define design specification.

4. Explain object orient design concept.

Or

Explain information gathering in debugging process.

5. Explain functional testing.

Or

What is CASE ? Explain three most used CASE tools.

7. Describe UML notations.

Or

Explain Multiplicity.

Section-C

7. What is SRS ? Discuss the need and characteristics of a good SRS document.
8. Discuss the various types of COCOMO Model. Explain the phasewise distribution of effort.
9. Explain debugging process used in software testing phase.
10. What is meant by Testing ? What is the difference between alpha and beta testing ?
11. What is UML Class Diagram ? Describe different elements of class diagram.

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B.C.A. (Part-III) Examination, 2023

DATA STRUCTURE

Paper - BCA-302

Time : 3 Hours]

[Maximum Marks : 70

Section-A

(Marks : 2 × 10 = 20)

Note :- Answer all *ten* questions (Answer limit 50 words). Each question carries 2 marks.

Section-B

(Marks : 4 × 5 = 20)

Note :- Answer all *five* questions. Each question has internal choice (Answer limit 200 words). Each question carries 4 marks.

Section-C

(Marks : 10 × 3 = 30)

Note :- Answer any *three* questions out of five (Answer limit 500 words). Each question carries 10 marks.

Section-A

1. Define/Discuss the following :

- (i) Why do we need Data Structures ?
- (ii) Define Abstract Data Type.
- (iii) What is Infix ?
- (iv) Mention the demerits of Linked List.

- (v) What is meant by Traversing ?
- (vi) What is meant by Pivot Node ?
- (vii) Define Sorting.
- (viii) Define Bubble Sort.
- (ix) What is a Weighted Graph ?
- (x) Define Hash Table.

Section-B

2. What do you mean by Complexity of an Algorithm ? Explain the meaning of worst-case analysis and best-case analysis with an example.

Or

Differentiate between linear and non-linear data structure.

3. Define and represent a doubly linked list.

Or

Mention the advantages and disadvantages of a linked list.

4. Construct an expression tree for the expression $(a + b * c) + ((d * e + 1) * g)$.
Give the outputs when you apply preorder, inorder and postorder traversals.

Or

Explain threaded binary tree ADT in detail.

5. Write the function in C for shellsort.

Or

Write a C/C++ program for binary search.

6. Explain the various representations of graph with examples.

Or

Write a note on the applications of Hashing.



Section-C

7. What is Data Structure ? Explain the various types of data structure in detail.
8. (a) Write a C program to count the number of nodes (elements) in a singly linked list.

(b) Write a program in C to insert an element (new node) in a singly lined list at the third position from the start node.
9. What are the steps to convert a general tree into binary tree ?
10. Write a C program to perform searching operations using linear and binary search.
11. Explain the technique of 'Hashing' as an effective searching technique. What are 'Collisions' ? How can they be handled ?

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B.C.A. (Part-III) Examination, 2023

PHP

Paper - BCA-303

Time : 3 Hours]

[Maximum Marks : 70

Section-A

(Marks : 2 × 10 = 20)

Note :- Answer all *ten* questions (Answer limit **50** words). Each question carries **2** marks.

Section-B

(Marks : 4 × 5 = 20)

Note :- Answer all *five* questions. Each question has internal choice (Answer limit **200** words). Each question carries **4** marks.

Section-C

(Marks : 10 × 3 = 30)

Note :- Answer any *three* questions out of five (Answer limit **500** words). Each question carries **10** marks.

Section-A

I. Attempt all questions :

- (i) What is PHP most used for ?
- (ii) Write name of the types of variables present in PHP.
- (iii) What is NULL in PHP ?

- (iv) Write history of PHP in brief.
- (v) What is the use of session_start() and session_destroy() functions ?
- (vi) What are sessions and cookies in PHP ?
- (vii) How will inserting data by MySQL ?
- (viii) What are the steps to create a new database using MySQL and PHP ?
- (ix) What are the variable-naming rules you should follow in PHP ?
- (x) What are some of the popular frameworks in PHP ?

Section-B

2. What are Forms ? Explain different Form fields.

Or

How to save the user's data in file ? Also write a program on it.

3. What are constants and variables in PHP ? Explain.

Or

Define Join. Explain various types of joins available in SQL.

4. Why PHP is known as scripting language ? Explain it.

Or

Differentiate between an indexed array and an associative array.

5. Explain various data types in PHP.

Or

How web pages are formed using CSS ?

6. What is the difference between function overloading and overriding ? Explain.

Or

Explain various date and time functions in PHP.

Section-C

7. What is RDBMS ? How to create a connection between PHP and MySQL ?
8. Explain the following :
 - (a) GET method
 - (b) Google Caffeine
 - (c) WYSIWYG
 - (d) Cookies
 - (e) String
9. What is SQL ? How to update the contents from Table A to Table B ? Explain it.
10. Explain array using suitable example and discuss how looping and accessing of data is done.
11. What is various Math function available in PHP ? Describe any *four* with example.

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B.C.A. (Part-III) Examination, 2023

ANDROID PROGRAMMING

Paper - BCA-304 (B)

Time : 3 Hours]

[Maximum Marks : 70

Section-A

(Marks : 2 × 10 = 20)

Note :- Answer all *ten* questions (Answer limit **50** words). Each question carries **2** marks.

Section-B

(Marks : 4 × 5 = 20)

Note :- Answer all *five* questions. Each question has internal choice (Answer limit **200** words). Each question carries **4** marks.

Section-C

(Marks : 10 × 3 = 30)

Note :- Answer any *three* questions out of five (Answer limit **500** words). Each question carries **10** marks.

Section-A

1. (i) What is the latest version of Android ? List any *four* versions of Android.
- (ii) Write any *four* features of Android.
- (iii) What is a Toast ? Write its syntax.
- (iv) What is the use of Web View in Android ?

- (v) What does APK stand for ?
- (vi) Differentiate Activities from Services.
- (vii) What is a Fragment ?
- (viii) What language is supported by Android for application development ?
- (ix) What is view group in Android ?
- (x) What folders are impotent in Android Project ?

Section-B

2. What is the Android Architecture ?

Or

What is the life cycle of Android Activity ?

3. What is a Service ? How is it implemented ?

Or

What is an Activity ? Which method is implemented by all subclasses of an Activity ?

4. Enlist the *four* Android Supported Dialogue Boxes.

Or

What are the different states wherein a process is based in Android ?

5. What are the dialog boxes that are supported in Android ?

Or

What do you mean by Spinner in Android ? Explain with an example.

6. What are the *four* essential activity states ?

Or

What is an intent in the context of Android ? Describe the different types.

Section–C

7. What is the importance of Android in the mobile market ? What are some disadvantages of Android ?
8. Explain the Android SDK.
9. What do you mean by views in Android ? Explain different types of views available in android.
10. List out different types of Layouts in Android. Explain any *two* layouts.
11. Explain the location based services provided by Android.

D-381**B.C.A. (Part-III) Examination, 2023****INTERNET OF THINGS**

Paper - BCA-305 (B)

*Time : 3 Hours]**[Maximum Marks : 70***Section-A****(Marks : 2 × 10 = 20)**

Note :- Answer all *ten* questions (Answer limit **50** words). Each question carries **2** marks.

Section-B**(Marks : 4 × 5 = 20)**

Note :- Answer all *five* questions. Each question has internal choice (Answer limit **200** words). Each question carries **4** marks.

Section-C**(Marks : 10 × 3 = 30)**

Note :- Answer any *three* questions out of five (Answer limit **500** words). Each question carries **10** marks.

Section-A

1. (i) Define IOT.
- (ii) What are the different components of IOT ?
- (iii) What are the three elements of SNMP ?
- (iv) What is NFV for IDT ?

- (v) Write the names of different layers of IOT.
- (vi) What is Django in IOT ?
- (vii) What are five applications of IOT ?
- (viii) What is Yarn useful for ?
- (ix) What is Raspberry PI ?
- (x) What do you mean by M2M in IOT ?

Section-B

2. Explain the characteristics of IOT.

Or

Write any *five* advantages of IOT.

3. Write a short note on WAMP.

Or

Write a short note on Django.

4. Describe the logical design of IOT.

Or

Draw neat and labelled architecture of IOT.

5. Differentiate between SDN and NFV.

Or

What is difference between WAMP and XAMPP ?

6. What is Map Reduce Programming Model ?

Or

What is Apache Hadoop ?

Section-C

7. What is IOT ? Describe in detail about IOT system management.
8. Explain M2M IOT standardized architecture.
9. Describe Apache Oozie uses. What are two parts of Oozie ?
10. What is SkyNet ? Explain SkyNet IOT platform.
11. Explain the layered IOT protocols architecture.