

2024

Time : 3 hours

Full Marks : 70

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Answer from both the Groups as directed.

Group – A

Answer any **four** questions of the following :

10×4 = 40

1. What are the advantages and disadvantages of Android ? What are the core building blocks of android ?
2. Explain development history of Android in detail. Also explain the various resources and files used by android.
3. List out methods of Android activity life cycle and explain all.

4. What is a layout in Android ? List out the different types of layout. Explain any two layouts.

5. What is Intent ? Explain Explicit vs. Implicit intents with example.

6. Design a simple Android application to add two numbers and display result in toast (Write Java and XML Code).

7. List down the advantages and disadvantages of SQLite Database.

8. What are widget available in android ? Explain any two widgets with example.

Group – B

Answer all questions of the following : $3 \times 10 = 30$

9. Discuss any two types of drawable resources.

10. What are broadcast receivers ?

11. What is DVM ?

12. What is the importance of Android in the mobile market ?

13. What is the Android Manifest. xml ?

14. What is the use of set Content View () method ?

15. What is the Google Android SDK ?

16. Describe Emulator.

17. What is Canvas ?

18. What is the difference between a Toast and a Snackbar in Android ?



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Answer from both the Sections as directed.

Section – A

Answer any **four** questions of the following :

$$10 \times 4 = 40$$

1. What do you mean by Operating System ?
Discuss the features, advantages and limitations of Mobile OS.

2. Draw the Gantt chart for the Round Robin Scheduling Policy and calculate the turnaround time, average waiting time, through put and

processor utilization for the following set of processes : (Quantum in 2)

Process	Processing time
P1	5
P2	3
P3	1
P4	2
P5	3

3. Define the term Deadlock. Explain various necessary conditions for a deadlock to occur. Explain, in brief, about deadlock prevention.
4. Explain SCAN and FCFS scheduling algorithm with suitable head-movement diagrams for the given example. Starting cylinder is 100 in the direction of increasing cylinder number. Cylinder request : 150, 160, 194, 94, 56, 54, 38, 37, 18.
5. Explain the paging address translation by direct mapping and associative mapping using suitable example and diagram.

6. What is Context Switching ? Explain the steps involved in "Context switch" between two processes with an illustration.
7. What is a Scheduler ? What are the different types of schedulers ? Give one word answer for the following :
 - (a) This module gives control of the CPU to the process selected by the short-term scheduler.
 - (b) This scheduler controls the degree of multiprogramming and is also known as job scheduler.
 - (c) This scheduler is responsible for transition of a process state from ready to running.
 - (d) This scheduler is responsible for suspending and resuming the process.
8. What do you mean by file ? What are the various ways of accessing a file ?

Section - B

(Compulsory)

Answer the following questions : $3 \times 10 = 30$

9. Define kernel of an OS.

X 10. Define First fit, Best fit and Worst fit memory allocation.

X 11. What is trap addressing in Segmentation ?

12. What is Thrashing ? How it is controlled using working set principle ?

Lead 13. What are the different states of a process ? *new, ready, running, waiting, terminated*

14. Differentiate between Internal and External Fragmentation.

15. What is starvation of processes in Operating System ?

16. Differentiate amongst multiprogramming, multiuser and multitasking operating systems.

17. Define System call.

18. List important responsibilities of OS.



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Group – A

Answer any **four** questions of the following :

10×4 = 40

1. Define HTML and its characteristics. What are the differences between HTML and HTML5?

2. Define list in HTML. Discuss briefly the types of lists available in HTML with example.

3. What is Hyperlink ? Write the syntax to hyperlink text and image. Explain it with suitable example.

4. What are the usages of CSS ? Explain different types of CSS selectors with example.
5. What is Style Sheet ? Explain different types of style sheets with example.
6. How are functions created and invoked in PHP ? Write a PHP function that finds the sum of N even numbers.
7. Design an UI (user interface) and write a program in PHP that displays the multiplication table of a number N.
8. Write the code to create a form in which following element must be present such as patient ID, Patient_name, Gender, Age and address. Write a PHP code to store the details of patient in patient-table of hospital database.

Group – B

Answer **all** questions of the following :

$$3 \times 10 = 30$$

9. Define tag in HTML.
10. What is tag used for ?

11. Why do we use a style sheet in HTML ?
12. How to redirect to a particular section of a page using HTML ?
13. How are comments added in HTML ?
14. Discuss various heading tags and their importance.
15. Write a program to find the maximum between two numbers in PHP.
16. What are the differences between echo and print in PHP ?
17. What is difference between HTML and XHTML ?
18. What is the difference between static and dynamic websites ?



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Group – A

Answer any **four** questions of the following :

10×4 = 40

1. Define .Net framework. Explain the major components of .Net framework.
2. What is visual studio ? Explain the following parts of Visual Studio IDE :
 - (a) Properties window
 - (b) Toolbox
 - (c) Solution Explorer

3. Define data type. Explain all the data types available in C#.
4. What is assembly in .Net framework ? What are the different types of assemblies ? Explain it.
5. Define conditional statements used in C#. Design a console program using C# to check the year whether the year is leap year or not.
6. What is event driven programming ? Explain any five Windows Form Controls, its properties and events.
7. Define ADO.Net model and its components. Describe some commonly used classes for handling database.
8. Write a program in C# to design a student registration form. Also write the code to store the data in student table.

Group - B

Answer all questions of the following :

3×10 = 30

9. Define CTS.

JI - 82/2

(2)

Contd.

10. Define Base Class Library (BCL).

11. What is the use of Common Language Runtime (CLR) ?

12. What is the difference between int and int 32 in C# ?

13. What is boxing ?

14. Differentiate between Panel Control and Group Control.

15. What do you mean by casting a data type ?

16. Describe two methods of Combobox windows form control.

17. What is the difference between an EXE and a DLL ?

18. Define LINQ.



JI - 82/2 (500)

(3) UG — BCA (C - 4004)

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Group — A

Answer any **four** questions of the following :

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1. Explain OSI model of computer networks ? Also, identify a layer of the OSI model responsible for the following functions :

- (a) Route Determination
- (b) Error detection and correction
- (c) Interface to outside world
- (d) Congestion control

2. What is data link layer ? Define different types of error and error detection techniques in data link layer.
3. What is IP address ? Explain various classes of IP addresses. Compare IPv4 and IPv6.
4. What do you mean by Routing ? Explain about different types of Routing algorithms.
5. If the 7-bit Hamming code received by a receiver is 1011011. Assuming the even parity, state whether the received word is correct or not. If wrong locate the bit having error.
6. What are the three switching techniques ? Explain them using suitable example and neat diagram.
7. Explain the importance of sliding window protocol. List and explain different types of sliding window techniques.
8. Define SMTP. Explain the components and working of SMTP.

Group - B

Answer all questions of the following :

3×10 = 30

9. What is the significance of twisted in twisted pair cable ?
10. What is the difference between Broadcasting and Multicasting ?
11. What is the advantage of a hierarchical addressing over a flat addressing system ?
12. Differentiate between Virtual circuit and Datagram.
13. Define full duplex and half duplex transmission modes.
14. Briefly describe HTTP.
15. What are the responsibilities of data link layer ?
16. What is MAC ?
17. List three important functions of transport layer.
18. Explain the operations of CSMA/CD.