NEW

Part–III 3-Tier

2016

COMPUTER SCIENCE

PAPER–VIIA (SET — 1)

(Honours)

(PRACTICAL)

Full Marks : 50

Time : 3 Hours

The figures in the right-hand margin indicate full marks.

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

Illustrate the answers wherever necessary.

Answer any *one* question from Group—A &
any *one* question from Group—B.

Group—A

(UNIX)

(*Marks : 15*)

Answer any *one* question from this group :   1×15

1. Write a shell script to search an element in the list.

2. Write a shell script to check the given file is writable by others or not.

3. Write a shell program to find out factorial of the given number.

4. Write a shell script that receipts any number of file names as argumentgs checks if every argument supplied is a file or a directory and reports accordingly. Whenever the argument is a file, the number of lines on it is also reported.

5. Write a shell program to find the largest and smallest number from a given set of number without using array.

6. Write a shell script that computes the gross salary of a employee according to the following :

   (a) if basic salary is <1500 then HRA 10% of the basic and DA = 90% of the basic

   (b) if basic salary is > = 1500 then HRA = 500 and DA = 98% of the basic

   The basic salary is entered interactively through the keyboard.

Group—B

(C++)

(Marks : 20)

Answer any *one* question :   1×20

1. A cloth showroom has announced the following seasonal discounts on purchase of items :

Purchase amount	Discount	
	Mill cloth	*Handloom items*
0 – 100	—	5·0
101 – 200	5·0	7·5
201 – 300	7·5	10·0
above 300	10·0	15·0

Write a C++ program using switch and if statement to compute the net amount to be paid by a customer.

2. Write a C++ program that will take N as input and will produce the following figure, where N is no. of rows and its value is to given by input :

```
            *
        *   *   *
      *   *   *   *   *
    *   *   *   *   *   *   *
  *   *   *   *   *   *   *   *   *
```

where, N = 5

3. Design a class to represent a bank account. Include the following numbers :

 Data members :

 ♦ Name of the depositor
 ♦ Account number
 ♦ Type of account
 ♦ Balance amount

 Methods :

 ♦ To assign initial values
 ♦ To deposit an amount
 ♦ To withdraw an amount checking balance
 ♦ To display the name and balance.

4. Write a program to find the number of character, word and lines in the given string as input.

5. Write a C++ program to implement complex number addition and multiplication using constructor and member functions.

6. Write a program that will take 4 cities name and temperature. Then print the name of cities according to descending values of temperature.

7. Write a program to implement a telephone bill class with name, address, tel. no., no. of calls as data member. Compute the amount to be paid where the charge per call is Rs. 2/- .

Practical Note Book	:	**05**
Viva	:	**10**

NEW

Part-III 3-Tier

2016

COMPUTER SCIENCE

PAPER—VIIA (SET — 2)

(Honours)

(PRACTICAL)

Full Marks : 50

Time : 3 Hours

The figures in the right-hand margin indicate full marks.

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

Illustrate the answers wherever necessary.

Answer any *one* question from Group—A & any *one* question from Group—B.

Group—A

(UNIX)

(*Marks : 15*)

Answer any *one* question from this group :   1×15

1. Write a shell script to list all of the directory files in a directory provided by examiner.

2. Write a shell program to find out reverse string of the given string and check the given string is palindrome or not.

3. Write a shell program to display only the file and directory names with their associated permissions.

4. Write a shell script that deletes all lines containing a specified word in one or more files supplied as arguments to it.

5. Write a shell script to sort a set of *n* numbers in ascending order, supplied by the examiner.

6. Write a shell program to print the prime digits of a given integer number.

Group—B

(C++)

(Marks : 20)

Answer any *one* question :   1×20

1. Write a C++ program to find the volume of a box has its sides w, h, d means width, height and depth. Its volume is v = w*h*d and also find the surface area given be the formulae s = 2(wh + hd + dw). Taking, Keyboard Input & then modify the program to take Command Line Input.

2. Write a C++ program that produce the output shown in the following figure, where N is no. of rows and its value is to be given by input :

```
            A
         B  C  D
      E  F  G  H  I
   J  K  L  M  N  O  P
Q  R  S  T  U  V  W  X  Y
```

where, N = 5

3. Write a C++ program using

(a) Default constructor ;

(b) Arguments constructor ;

(c) Copy constructor.

To find the area of a rectangle using the following formulae :

Area = length * breadth.

4. Write a C++ program that will take file name as input and will find the frequency of different vowels and special characters such as \n, \t and white spaces occurs in the file content using switch case.

5. Write a C++ program to demonstrate multiple inheritance.

6. Write a program to implement flight class with data member as flight member, source, destination and fare. Write a copy constructor and a number function to display the flight information.

4

7. Write a C++ program that create an **abstract** class called Dimension. Create two subclasses **Rectangle** and **Triangle**. Include appropriate methods for both the subclasses that calculate and display the area of the rectangle and triangle.

Practical Note Book	:	**05**
Viva	:	**10**

3. Consider the following database :

Flights (fl_no, aid, from, to, distance, departs, arrives, price)

Aircraft (a_id, aname, cruising range)

Certified (e_id, a_id)

Employees (e_id, e_name, salary)

(a) Find the name of aircraft such that all pilots certified to operate them earn more than 80,000.

(b) Find the names of pilots whose salary is less than the price of the cheapest route from Kolkata to Mumbai.

(c) Find the names of pilots certified for some Boeing aircraft.

(d) Find the names of all aircraft that can be used on router from Kolkata to Delhi.

(e) Print the enames of Pilots who can operate planes with cruising range greater than 3,000 miles but are not certified on any Boeing aircraft.

4. Consider the following database :

PATIENTS (P_id, P_name, age, address)

DOCTOR (D_id, D_name, D_add)

ATTEND (D_id, P_id)

ADMITTED (P_id, d_o_a)

(a) List the name of patient who have the age greater than 50 and d_o_a 09.07.2015.