CS-103

Autumn 2013

Q1. Write a program to decide the class of a family depending on its yearly income.

The various classes are:

\* < Rs. 50,000 very poor

\* 50K to 100K poor

\* 100K to 300K lower middle

\* 300K to 1000K middle

\* 1000K to 2500K upper middle

\* > 2500K rich

Using (i) if statements (ii) using if else

1. with several System.out.println (b) with single System.out.println statement

2. Write a program for finding the maximum value from three given integers.

(i) with any number of comparisons i.e. compound relational expressions

(ii) with maximum of 3 comparisons i.e without compound relational expressions (hint using nested if.. else statements)

3. WAP to find area and circumference of circle using symbolic constant to store the value of pi= 3.1419

4. WAP a program to print (hint nested for loops)

1

22

333

4444

Q5. WAP to find the sum of integers between 50 and 100, which are divisible by 7.

Q6. WAP to find the grade of a student given his/her aggregate marks

Marks range Grade Grade points

* 1. A1 10

81-90 A2 9

71-80 B1 8

61-70 B2 7

51-60 C1 6

41-60 C2 5

* 1. D 4

1. using if else if
2. Given the **grade points** show the marks range using switch statement

Q7. WAP that will read the value of x and evaluate the following function

{ 1 for x>0

Y= { 0 for x=0

{ -1 for x<0

Using (i) nested if statements (ii) else if (iii) conditional operator ?:

Q8.WAP to find the factorial of number using (i) for loop (ii) while loop (iii) do loop

Q9.WAP using while loop to reverse the digits of given number e.g. 4567 should be printed as 7654 (hint using modulus operator % and integer division / to get the n-1 digit from n digit number)

Q10.WAP to compute the sum of digits of number

Q11. Check Armstrong number e.g. 371= 3\*3\*3+7\*7\*7+1\*1+1\*

Q12. WAP to read a number and display the display all the prime numbers present in its range.

Q13. WAP to print ( using for loops)

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Q14. Write a program to evaluate sine value of an angle in degrees entered by the user using the following series. Prompt the user to enter the number of terms to evaluate. Display the %error involved based on the difference between the value estimated and found using the Java Math library function. The program should terminate only when a negative angle is

entered. sin(x) = x-x3/3! + x5/5! -….

**Q15. WAP with a method to find the sum of first 10 odd and even numbers.**

**Q16. WAP with a method to find the power of**

1. **integer**
2. **float (also compare the result with pow function using Math library )**

**Q17. WAP with methods (i) Input a positive number from the keyboard and (ii) find its prime factors.**

**Q18. WAP with method to display the following depending on number of rows:**

**1**

**2 3**

**4 5 6**

**7 8 9 10**

**Q19 ) WAP with a method to display the following pattern depending on number of row.**

**void stars(int )**

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**\* \***

**\* \* \***

**Q20. WAP with a method to circularly shift the values of three variables and display the shifted values immediately after the method call. e.g x = 3, y = 4, z= 5 then after shift x= 4, y = 5, z = 3.**

**int shift(int, int , int )**