

WHOLE SYLLABUS REVISION WITH FUNDAMENTAL PROGRAMS

If-Else

- Leap Year (practice of nested if)
- Roots of quadratic equation $\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
and if equal ($b^2-4ac=0$), distinct(>0) or imaginary (<0).
- Buzz Number (Ends or is divisible by 7)
- Greatest of 2 times in (h, m and s).
- MarksGrade
-39 D
40-59 C
60-74 B
75- A

6. Discount or Tax calculation

Basic-Pay	Others	Tds
-10000	Hra: 1000, Da: 35%, Pf:200	10%
10001-25000	Hra: 1200, Da: 35%, Pf:400	12% of amount exceeding 10000 + as above
25000-	Hra: 1500, Da: 35%, Pf:800	15% of amount exceeding 25000 + as above

Net Pay=Basic+hra+da-pf-tds.

7. Slabs (Library fine)

Days Late	Fine per day
First 3 days	Rs. 2/-
Next 4 days	Rs. 3/-
Over a week	Rs. 5/-

Switch

8. Menu Driven Program – Should keep on running till the user chooses to exit.

- Choice 1: Perimeter of a Rectangle
- Choice 2: Circumference of a Circle
- Choice 3: Random number between 1 & 6
- Choice 4: Exit

9. Input number and then display the menu

- Choice 1: Armstrong
- Choice 2: Automorphic

10. Calculator (input 2 numbers and an operator)

11. Centigrade to Fahrenheit or vice-versa.

12. Digit in words.

Functions (Input- arguments, Answer- return)

13. Calculating (i) Simple Interest (ii) Perfect number

Using Overloading -

- Calculating Area of a Square and a Rectangle
- Change character to ascii or ascii to character.
- Volume- cuboid(lbh), Sphere($\frac{4}{3}*\pi r^3$), Cylinder($\pi r^2 h$)

Iteration (Looping)

17. Series: (i) 0 1 1 2 3 5 8 ... 10 terms (Fibonacci Series)

(ii) 1 -2 3 -4 ...25 (iii) 0 3 8 15...99

(iv) 1 12 123 1234 12345 (numbers)

18. Numbers – (i) Prime (Divisible by 1 or itself)

(ii) Factorial (5!=120) (iii) Perfect (6=1+2+3)

(iv) HCF/LCM (v) Palindrome.

19. $X = \frac{ML}{2(M+m)}$ L=50, Input M and $m=.5, 1, 1.5...5.0$

20. Population and growth rate increases by 10%. Input initial population and growth rate and display for next 10 years. $P=P+(P*G/100)$.

21. Input 10 numbers and display the smallest.

Nested Looping

22. Special/ krishnamurthy number (145=1!+4!+5!)

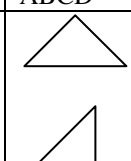
23. Sum of $\frac{\sqrt{1}}{1!} - \frac{\sqrt{1+2}}{2!} + \frac{\sqrt{1+2+3}}{3!} - \dots \frac{\sqrt{1+..n}}{n!}$

24. Prime number between 1 and 100.

25. Multiplication Tables of numbers between 13 and 19.

26. Frequency of each character in a string.

27. Frequency of each digit in a number.

28. 1 12 123 1234	1 22 333 4444	* ** *** ****	A AB ABC ABCD	1 10 101 1010
1 23 456 78910	T AA BBB LLLL EEEE	T TA TAB TABL TABLE		Changing the alignment as shown and Reversing.

Single Dim arrays.

29. Bubble Sort, Selection Sort, Linear Search, Binary Search (Remember how to change order and work on Strings)

30. Enter 5 values in an array and display the sum and average of even numbers.

31. Enter names and marks in an array and display the name of the student who has scored the highest marks.

32. Store name and phone numbers in 2 different arrays. Ask for a name and display the phone number.

33. Store item[], quantity[], price[] and display a bill (with headings)

34. Store 10 values in an array. Delete the 5th value by shifting all to the left and putting a zero at the end.

35. Show unique values in an array.

Double Dim

36.a. (3 Salesmen, 4 zones - display total of each salesman and zone), 36.b Sum of Diagonals, 36.c. Display the location of a name in 3x3 Array., 36.d. Add 2 matrices.

Strings

37. Count vowels in either case

38. Palindrome

39. Piglatin (KING=INGKAY, TROUBLE = OUBLETRAY).

40. Toggle case of each character

41. Capitalize first character of each word of a sentence.

42. Display words which start with the letter 'A' or 'a'.

43. Show "This" in place of "That" in a sentence and also display a count of the occurrences.

44. Longest word in a sentence

45. Initials of a name (E.g. M.K.G.).

46. Display a sentence in reverse.

47. Sort the alphabets of a word.

48. Binary to Decimal / Decimal to Binary.

Object Oriented Programming

(Programs in conditions important for this)

49. Class: TRIANGLE

Private instance variables: s, a, b, c.

Private functions: calcS() – To calculate S

Public Functions: A default & a parameterized constructor.

input() – to input values

double area() – to calculate and return the area

display()- to display the area calculated by area()

Also write main() in another class to execute the functions of the class defined above.

50. Intentionally left blank.

[END]