ME 630

FIRST YEAR HIGHER SECONDARY MODEL EXAMINATION, JUNE 2022
Part – III
COMPUTER SCIENCE
Maximum : 60 Scores

Time : 2 Hours
Cool-off Time : 15 Minutes

General Instructions to Candidates :

- *There is a 'Cool off time' of 15 minutes in addition to the writing time.*

- *Read questions carefully before answering.*

- *Read the instructions carefully.*

- *Calculations, figures and graphs should be shown in the answer sheet itself.*

- *Malayalam version of the questions is also provided.*

- *Give equations wherever necessary.*

- *Electronic devices except non programmable calculators are not allowed in the Examination Hall.*

വിദ്യാർത്ഥികൾക്കുള്ള പൊതുനിർദ്ദേശങ്ങൾ :

- നിർദ്ദിഷ്ട സമയത്തിന് പുറമെ 15 മിനിട്ട് 'കൂൾ ഓഫ് ടൈം' ഉണ്ടായിരിക്കും.

- ഉത്തരങ്ങൾ എഴുതുന്നതിന് മുമ്പ് ചോദ്യങ്ങൾ ശ്രദ്ധാപൂർവ്വം വായിക്കണം.

- നിർദ്ദേശങ്ങൾ ശ്രദ്ധാപൂർവ്വം വായിക്കണം.

- കണക്ക് കൂട്ടലുകൾ, ചിത്രങ്ങൾ, ഗ്രാഫുകൾ, എന്നിവ ഉത്തരപേപ്പറിൽ തന്നെ ഉണ്ടായിരിക്കണം.

- ചോദ്യങ്ങൾ മലയാളത്തിലും നൽകിയിട്ടുണ്ട്.

- ആവശ്യമുള്ള സ്ഥലത്ത് സമവാക്യങ്ങൾ കൊടുക്കണം.

- പ്രോഗ്രാമുകൾ ചെയ്യാനാകാത്ത കാൽക്കുലേറ്ററുകൾ ഒഴികെയുള്ള ഒരു ഇലക്ട്രോണിക് ഉപകരണവും പരീക്ഷാഹാളിൽ ഉപയോഗിക്കുവാൻ പാടില്ല.

Answer any 5 questions from 1 to 7. Each carries 1 score. (5×1=5)

1. What is the major technological advancement in the fourth generation computers ?

   a) Transistor

   b) Integrated circuit

   c) Microprocessor

   d) Vacuum Tube

2. _____ memory is small and fast memory between the processor and RAM.

3. Choose the correct exit controlled loop from the following looping statements written below :

   a) while

   b) for

   c) do...while

   d) None of the above

4. _____ character is used as a string terminator and added at the end of the string.

5. _____ function is used to check whether a character is in the upper case or not.

6. The ability of a function to call itself is known as _____

7. A _____ is a device that can interconnect different networks having different protocols.

   a) Router   b) Bridge

   c) Switch   d) Gateway

Answer any 9 questions from 8 to 19. Each carries 2 scores.   **(9×2=18)**

8. Do the following number conversions

   a) $(31)_{10}$ to binary.   **(1)**

   b) $(10001)_2$ to decimal.   **(1)**

9. Define Data processing.

10. Compare RAM and ROM.

11. What is an Operating System ?

12. What are the two types of Documentation ?

13. How are non-graphic characters represented in C++ ? Give an example.

14. Write the purpose of default statement in switch statement.

15. Compare 'break' and 'continue' statements in C++.

16. Define an Array.

17. Compare Linear search and Binary search.

18. Explain the merits of modular programming.

19. Pick the odd one out and give reason :

   a) strlen()

   b) itoa()

   c) strcpy()

   d) strcat()

Answer any 9 questions from 20 to 32. Each carries 3 scores.
                                                                       (9×3=27)

20. Explain Von Neumann architecture of a computer with proper diagram.

21. Represent – 60 in 1's complement form.

22. What is e-waste ? Explain different e-waste disposal methods.

23. What is mean by debugging ? What are different types of errors in computer programs ?

24. What are the rules for naming identifiers in C++ ?

25. Define data types in C++ ? List fundamental data types in C++.

26. Rewrite the following statement using *if...else* statement.

result = mark > 30 ? 'p' : 'f';

27. Write an algorithm for bubble sort.

28. Differentiate between 'get()' and 'getline()' functions in C++.

29. Write down the differences between call by value and call by reference function calling techniques in C++.

30. What is a computer network ? What are the major advantages of a computer network ?

31. Explain the main sections of e-mail with an example.

32. Write the disadvantages of social media. What are the different ways to avoid the disadvantages of social media ?

Answer any 2 questions from 33 to 36. Each carries 5 scores.   (2×5=10)

33. a) State De Morgan's theorems.   (2)

b) Draw logic circuit for the Boolean expression $X + \overline{Y}$.   (2)

c) Draw the logical symbol of universal gates.   (1)

34. a) What is flowchart ? List any three advantages of flowcharts. (2½)

b) Convert the following algorithm to corresponding flowchart. (2½)

Step 1 : START

Step 2 : Input A, B, C

Step 3 : S = A + B + C

Step 4 : Avg = S/3

Step 5 : Print S, Avg

Step 6 : STOP

35. a) Write the basic structure of a C++ program. (2½)

b) Explain any one method of type conversion in C++. (2½)

36. What is Topology ? Compare different LAN topologies.

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