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Reg. No. : .....

Name : .....

Sixth Semester B.Sc. Degree Examination, April 2017
First Degree Programme under CBCSS
PHYSICS
Core Course – XII
PY 1644 : Digital Electronics and Computer Science
(2014 Admission)

Time : 3 Hours Max. Marks : 80

SECTION – A

Answer **all** questions, **each** carries **1** mark.

1. Convert the decimal number 151.75 to binary.
2. What is a full adder circuit ?
3. Draw the truth table of JK flip-flop.
4. What is the concept of virtual memory ?
5. What is the significance of declaring a constant unsigned in C programming ?
6. What is global variable in C programming ?
7. What is the function of 'return' statement in C language ?
8. List three file modes in C.
9. Mention one disadvantage of Newton-Raphson method.
10. What is 'least squares fit' with respect to a function f(x) ? **(10×1=10 Marks)**

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SECTION – B

Answer **any eight**, **each** carries **2** marks.

11. What is an ASCII code ?
12. Draw the gate circuit of RS flip flop.
13. What is a full subtractor ?
14. What is the advantage of JK flip-flop over SR flip-flop ?
15. What is non-volatile memory ?
16. How does a cache memory increase the speed of operation of a computer ?
17. What is the secondary memory ?

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18. What is main difference between structure and union ?
19. Write a syntax of while loop in C programming.
20. What is a multidimensional array ?
21. Write a C program to find largest between two numbers.
22. Differentiate interpolation and extrapolation. (8×2=16)

SECTION – C

Answer **any six**, **each** carries **4** marks.

23. State and prove De Morgan's theorem.
24. Use K-map to realize a Full adder circuit.
25. What are combinational and sequential circuits ?
26. Explain the operation of a static RAM cell.
27. Explain the type identifiers in C.
28. Write a short note on precedence and order of evaluation in C programming.
29. With an example explain the instructions ++i and i++.
30. Explain Lagrange interpolation technique.
31. Explain Simpson's rule used in numerical integration. (6×4=24)

SECTION – D

Answer **any two**, **each** carries **15** marks.

32. Explain with the help of a block diagram the functional units of a computer.
33. Briefly explain the following storage devices.
    i) Magnetic Hard Disks.
    ii) Magnetic tape systems.
34. Explain the following C programming instructions using general syntax and example :
    i) if
    ii) if-else
    iii) nested if-else.
35. Write the algorithm to find the solution for an equation using the method of successive bisection. (2×15=30)

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