



Avinashilingam Institute for Home Science and Higher Education for Women
(Deemed to be University under Category 'A' by MHRD, Estd. u/s 3 of UGC Act 1956)
Re-accredited with 'A+' Grade by NAAC. Recognised by UGC Under Section 12B
Coimbatore - 641 043, Tamil Nadu, India

Bachelor's Degree Examination – August 2020
VI Semester

Class : III UG
Major : Physics

Time : 2 Hours
Max. Marks : 50

15BPHC21 Digital Electronics

Part A

10 x 1 = 10

Choose the Correct Answer

1. Hexadecimal number system has a base of
 - a. 8
 - b. 16
 - c. 2
 - d. 5
2. $(1011.011)_2 = (?)_{10}$
 - a. $(0.375)_{10}$
 - b. $(11.375)_{10}$
 - c. 2^2
 - d. $(100)_{10}$
3. $A + \bar{A} =$
 - a. 0
 - b. 1
 - c. ∞
 - d. 5
4. Full adder circuit consists of
 - a. 4 half adders
 - b. 3 half adders
 - c. 2 half adders
 - d. 5 half adders
5. In order to simplify Boolean expression which is used?
 - a. Formula
 - b. Table
 - c. Karnaugh map
 - d. ICs are used
6. ASCII stands for
 - a. American Shift Code Information Interchange
 - b. All small Scale Commercial Interface
 - c. American Standard Code for Information Interchange
 - d. Amsdevdon Standard Course In Intel
7. Flip Flop is a memory device of _____ bits.
 - a. 1
 - b. 2
 - c. 3
 - d. 4
8. The number of Flip Flops required for constructing MOD-5 counter is
 - a. 3
 - b. 2
 - c. 5
 - d. 1
9. RAM
 - a. converts binary data to decimal
 - b. stores binary & decimal values
 - c. stores data & machine code
 - d. is a bus to send data to CPU
10. EEPROM stands for
 - a. Electrically Erasable Programmable Read Only Memory
 - b. Electron Electrically Programmed Read Only Memory
 - c. Ever Electrically Programmed Read Only Memory
 - d. Enable Erasable Programmed Read Only Memory

Part B**3 x 6 = 18**Answer any **Three** questions**Each answer should not exceed 400 words or two pages**

11. Convert $(1010)_2$ into decimal equivalent.
12. Convert $(0.1101)_2$ to decimal equivalent.
13. Explain about AND, OR and NOT operation.
14. Discuss about the operation of half - subtractor circuit.
15. Elaborate about sum of product method with suitable example.
16. Write short notes on Excess 3 code.
17. With suitable diagram explain about the operation of RS and JK flip flop.
18. Discuss about SISO, SIPO, Registers.
19. Give an account of EPROM.
20. Outline the features of EEPROM.

Part C**2 x 11 = 22**Answer any **Two** questions**Each answer should not exceed 800 words or four pages**

21. Subtract $(1101)_2$ from $(1010)_2$ by: i. One's and two's complement method
ii. Subtract $(10001)_2$ from $(10011)_2$ by two's complement method.
22. Add $(127)_8$ & $(356)_8$ and subtract $(134)_8$ from $(7723)_8$
23. With suitable circuit explain how NAND and NOR gate acts as a universal building block.
24. Explain the operation of full adder circuit with a neat diagram.
25. What is a Karnaugh map ? Give its significance with suitable algebraic expression and explain about the simplification method.
26. Compare and contrast weighted and non- weighted codes and explain gray codes.
27. Compare synchronous and asynchronous counters.
28. Explain the operation of decade counter.
29. With suitable diagram explain the operation of RAM and ROM.
30. Discuss about PROM with suitable circuit diagram.
