EVN–2694

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BCA II Semester Examination, 2023–24

DIGITAL ELECTRONICS

Paper : IV

Time : 2 : 30 Hours] **[Max. Marks :** 70

Note : Attempt any *five* questions. All questions carry equal marks.

Q. 1. (a) What are basic properties of Boolean algebra ?

(b) Explain various number systems and codes and their conversion with example.

Q. 2. (a) Explain the Karnaugh map with all its limitation.

(b) What are called don't care condition ?

Q. 3. (a) Draw the truth table for half adder circuit and Write the Boolean expression for sum and carry.

(b) What is programmable logic array ?

Q. 4. (a) Convert decimal 8723 to both BCD and ASCII Codes.

(b) Simplify the following expression and draw truth table :

$$X \cdot Y + X (Y + Z) + Y (Y + Z)$$

Q. 5. (a) Explain the following :

(i) EEPROM

(ii) Full adder

(iii) Multiplexer

(iv) JK flip-flop

(b) State the difference between the combinational and sequential circuit.

Q. 6. Implement the Boolean expression using :

$$f(A, B, C, D) = \Sigma(1, 2, 3, 4, 7, 9, 10, 12)$$

Q. 7. Do as directed :

(a) Convert (67A9)16 into decimal

(b) Add (+80) and (- 70) using 2's complement

(c) Difference between RAM and ROM

(d) convert (657)8 into decimal

(e) Explain different types of memory

(f) Explain Universal gates

(g) Define Decoders