OR

   (p) Draw logic diagrams and truth table for D, T and RS Flip Flops.   6

   (q) Draw and explain JKMS FlipFlop.   6

EITHER

5. (a) Draw and explain working of Ripple counter with timing diagram.   6

   (b) Explain in detail the 4-bit ring COUNTER.   6

OR

   (p) Draw and explain MOD-10 counter with suitable waveforms   6

   (q) Explain SIPO shift register.   6

EITHER

6. (a) Draw and explain working of decimal to BCD encoder.   6

   (b) Explain 4 : 1 multiplexer in detail.   6

OR

   (p) Draw and explain working of 2 : 4 line decoder. 6

   (q) Explain the 1 : 4 demultiplexer with suitable logic diagram.   6

EITHER

7. (a) Explain different types of Semiconductor memories.   6

   (b) Explain primary and secondary memories with suitable examples.   6

OR

   (p) Explain the concept of memory hierarchy.   6

   (q) Explain volatile and non-volatile memory with example.   6

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AQ–663A

B.Sc. (Part–I) Semester–II Examination

2S : ELECTRONICS

(Digital Electronics)

Time : Three Hours]   [Maximum Marks : 80

Note :– (i) **ALL** questions carry equal marks.

     (ii) Draw neat sketches wherever necessary.

1. (A) Fill in the blanks :

    (i) A full adder has _____ inputs and two outputs.

    (ii) TTL stands for _____.

    (iii) A demultiplexer has _____ inputs and many outputs.

    (iv) EPROM is _____ ROM.   2

  (B) Choose correct alternative and rewrite the following :

    (i) A delay flipflop is also called _____.

      (a) DFF

      (b) JKFF

      (c) TFF

      (d) None

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(ii) If A and B are two inputs to AND gate then its output will be _____.

   (a) A.B

   (b) A+B

   (c) A ⊕ B

   (d) None

(iii) The radix of an octal number system is _____.

   (a) 2

   (b) 4

   (c) 8

   (d) 16

(iv) A MOD - 5 counter can count up to _____ clock pulses.

   (a) 08

   (b) 05

   (c) 07

   (d) None.   2

(C) Answer the following in **one** sentence :

  (i) What is monostable multivibrator ?   1

  (ii) What is shift register ?   1

  (iii) What is a multiplexer ?   1

  (iv) What does pair stand for in K–map ?   1

EITHER

2. (a) Give the logic symbols, boolean equation and truth table for OR and NOR gates.   6

   (b) Explain construction and working of G-bit binary adder.   6

OR

   (p) Convert $(30.6)_{10}$ to binary, octal and hexadecimal number system.   6

   (q) Give the logic symbols, boolean equation and truth table for NAND and Ex-OR gates.   6

EITHER

3. (a) Explain Fan-in, Fan-out and noise immunity related to digital IC's   6

   (b) Prove :

    (i) $(A+B)(A+C) = A + BC$

    (ii) $(A + B)(\overline{A} + C) = AC + \overline{A}B$ 6

OR

   (p) State and prove the De Morgan's theorem.   6

   (q) Draw and explain the working of TTL NAND gate.   6

EITHER

4. (a) Draw and explain the working of JKFF with truth table.   6

   (b) Explain transistorized monostable multivibrator.   6