

AS-1504

B.C.A. (Part—I) Semester—II Examination**DIGITAL TECHNIQUES—II****Paper—2-ST-3**

Time : Three Hours]

[Maximum Marks : 60

Note :— (1) **ALL** questions are compulsory.

(2) Draw neat diagram wherever necessary.

(3) Due credit will be given to neatness.

1. (A) What is multivibrator ? State its types. Explain construction and operation of transistorized astable multivibration with waveform. 8

- (B) Explain construction and operation of JK Flip Flop. 4

OR

2. (P) What is race-around condition in JK FF ? How can it be removed in JKMS FF ? Explain construction and operation of JKMS FF with logic diagram and truth table. 8

- (Q) Explain the operation of preset and clear terminal in Flip-Flop. 4

3. (A) Explain construction and operation of 4-bit synchronous counter with diagram and waveform. 6

- (B) State the differences between synchronous and asynchronous counter. 3

- (C) Draw the logic diagram and truth table of MOD-6 counter. 3

OR

4. (P) Explain the construction and operation of 4-bit asynchronous counter with logic diagram and waveform. 6

- (Q) State the three applications of counters. 3

- (R) Draw pin diagram of 7490 and 7493 IC. 3

5. (A) Explain the construction and operation of SISO register with logic diagram and truth table. 6
- (B) Draw the logic diagram of SIPO and PIPO shift register. 6

OR

6. (P) Explain the construction and operation of ring counter. 6
- (Q) State any three applications of shift registers. 3
- (R) Draw the logic diagram of PIPO shift register. 3
7. (A) Differentiate primary and secondary memory. 3
- (B) Explain memory hierarchy with diagram. 6
- (C) Explain construction of DVD. 3

OR

8. (P) Give the classification of memories in detail. 3
- (Q) Explain following semiconductor memories in short :
- (1) RAM
- (2) ROM
- (3) PROM
- (4) EPROM. 6
- (R) Explain construction of CD. 3

9. (A) Explain construction and operation of weighted registers D/A converter in detail. 6
- (B) Explain construction and operation of counter type A/D converter. 6

OR

10. (P) Explain R-2R ladder type D/A converter with its operation and construction. 6
- (Q) Draw the pin diagram of DAC0808IC and ADC0808IC. 6