B.C.A. (Part—I) Semester—II Examination
2ST3 : DIGITAL TECHNIQUES—II

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) Explain the construction and operation of transistories bistable multivibrator. State application of it. 6
(B) Explain the construction and operation of JK Flip Flop with logic diagram and truth table. 6

OR

2. (P) Explain the construction and operation of transistoried astable multivibrator with diagram, waveform and calculate time period. 6
(Q) Explain construction and operation of RS Flip Flop with logic diagram and truth table. Explain the concept of preset and clear in short. 6
3. (A) Explain 4-bit Up-Down asychronous counter operation with control signal and truth table. 6
(B) Explain MOD-6 asychronous counter with logic diagram, truth table and waveform. State the applications of counter. 6

OR

4. (P) Explain the construction and operation of 4-bit asychronous counter with logic diagram, truth table and wave form. 6
(Q) Explain the logic and pin diagram of 7490 counter IC. 6
5. (A) Explain left shift and right shift mode operation of 4-bit SISO register with diagram. 6
(B) Explain construction and operation of ring counter with logic diagram, truth table and waveform. 6

OR

6. (P) Explain logic diagram and operation of 7495 shift register IC for right and left shift SISO mode and PIPO mode operation. 12
7. (A) Give the classification of memories and differentiate primary and secondary memories. 6
(B) Explain the following semiconductor memories :
(i) RAM
(ii) ROM
(iii) PROM. 6

OR

8. (P) Explain the memories hierarchy for processing system. 6
(Q) Explain the construction and operation of floppy disk. 6
9. (A) Explain the need of D/A and A/D converter and state their applications. 6
(B) Explain the construction and operation of 4-bit R-2R ladder type D/A converter. 6

OR

10. (P) Explain the specifications of D/A convertor. 6
(Q) Explain the construction and operation of counter type A/D converter with logic diagram. 6