

AT-431

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) Explain working of transistorized Bistable multivibrator. 6
- (B) What is clock SR Flip-Flop ? Explain the working of clock SR Flip-Flop using NAND gates with diagram and truth table. 6

OR

2. (P) Explain JK Flip Flop with logic diagram and truth table. Explain race around condition in JK Flip-Flop. 8
- (Q) Explain the concept of preset and clear terminal with diagram. 4
3. (A) What is modulus of counter ? Explain working of 3-bit asynchronous counter with diagram and waveforms. 6
- (B) Define :
 - (1) Decade counter
 - (2) Up/Down counter
 - (3) Synchronous counter
 - (4) Asynchronous counter. 4
- (C) State applications of Counter. 2

OR

4. (P) Draw and explain IC 7493 with its operation. 6
- (Q) What is counter ? Give the difference between synchronous and asynchronous counter. 6

5. (A) Explain the working of Johnson counter with neat circuit diagram. 6
 (B) What are the types of shift registers ? Draw and explain SISO shift register. 6

OR

6. (P) What is shift register ? Draw and explain construction and working of SIPO shift register. 6
 (Q) Explain the operation of shift register as ring counter. 6
 7. (A) What is memory ? Give classification of memories and differentiate between primary and secondary memory. 6
 (B) Explain the construction of Floppy disk and Winchester disk. 6

OR

8. (P) Give difference between RAM and ROM. 4
 (Q) Explain :
 (1) ROM
 (2) PROM
 (3) EPROM
 (4) EEPROM. 4
 (R) What is memory hierarchy ? Explain with neat diagram. 4
 9. (A) What is data converter ? Explain the need of data converters. 4
 (B) Draw IC DAC 0808 and explain its operation. 4
 (C) State specifications of D/A converter. 4

OR

10. (P) Explain counter type A/D converter with block diagram. 6
 (Q) What is A/D converter ? Explain successive approximation type of A/D converter and explain. 6