Roll No. | | | | | | | | | | | | **Total No. of Pages : 02**

Total No. of Questions :09

Bachelor of Science (Non-Medical) (Sem.–4)

ELECTRONICS

Subject Code : BSNM-404-18

M.Code : 77682

Date of Examination : 15-12-22

Time : 3 Hrs. **Max. Marks : 50**

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying ONE mark each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION-A

1. Write briefly :

a. Draw the VI characteristics of a Diode.

b. Explain the need of a biasing circuit.

c. Discuss the significance of Fermi level.

d. What is the difference between intrinsic and extrinsic semiconductors? Explain.

e. Compare BJT and FET.

f. Discuss the principle of oscilloscope.

g. Write down the basic requirements for the oscillation to occur.

h. What is the need of octal and hexadecimal numbers? Explain.

i. Define modulation. Why it is required?

j. What do you mean by truth table? Draw the truth table of XNOR gate.

SECTION-B

2. Draw and explain the most commonly occurring transistor configuration. Discuss its input and output characteristics.

3. What is the need of an amplifier? Discuss the classification of amplifier in detail.

4. Discuss the various characteristics and applications of Zener diode.

5. Prove that NAND and NOR gates are known as universal gate.

6. What do you mean by number system? Convert 57.23 decimal number to octal number, hexadecimal and binary number.

SECTION-C

7. What do you mean by Karnaugh Map? List its advantages. Reduce F(D, C, B, A) = $\sum$m (0, 2, 4, 6, 8, 10, 12, 14) to the simplest possible form using K- Map method.

8. Draw the circuit diagram and explain in detail Wein bridge and phase shift oscillators. Also compare the above two oscillators.

9. Explain the following :

   a) Photodiode

   b) FET

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.