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

Total No. of Questions : 11

M.Sc. (Physics) (Sem.-1)

ELECTRONICS

Subject Code : MSPH-414-18

M.Code : 75125

Date of Examination : 14-01-2023

Time : 3 Hrs. **Max. Marks : 70**

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains SEVEN questions carrying FIVE marks each and students have to attempt any SIX 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) Define drift and diffusion of carriers.

b) Draw half adder circuit.

c) Give applications of rectifiers.

d) Describe current controllable devices.

e) Differentiate between UJT and BJT.

f) Draw the pin diagram of 555 IC.

g) What is the function of clock in flip flops?

h) What are the advantages of dynamic RAM?

i) Enlist various types of ROM.

j) Explain TRIAC.

SECTION-B

2. Describe the construction and working of Zener diode.

3. Explain SCR based crowbar protection in detail.

4. Design and discuss working of digital voltmeter system.

5. Minimize the expression F = A'B'C' + A'BC + AB'C + ABC using Boolean algebra theorems.

6. Design and explain 16 to 1 Multiplexer.

7. Explain various types of flip flops and their applications.

8. Explain the construction of Tunnel diodes.

SECTION-C

9. Design 2 bit synchronous counter using JK flip flops and draw its waveforms.

10. Draw and explain full adder and MSI adder serial operation.

11. Explain light emitting diodes circuit diagram, working and output characteristics.

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.