

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

Q.23 Draw the circuit for full wave rectifier and explain its working with the help of input and output wave forms.

Q.24 Explain the different transistor configuration.

Q.25 Write short note on any two :

- a) counter
- b) Shift register
- c) Transistor as an amplifier

No. of Printed Pages : 4

220933

Roll No.

3rd Sem / Electrical

Subject : Analog and Digital Electronics

Time : 3 Hrs.

M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 In a p-type semiconductor the majority of charge carriers are

- a) holes
- b) electrons
- c) positive ions
- d) negative ions

Q.2 The ripple factor in a half wave rectifier is

- a) 0.482
- b) 1.21
- c) 0.3
- d) any of the above

Q.3 The arrowhead on the transistor symbol always points in the direction of

- a) hole flow in the emitter region
- b) electron flow in the emitter region
- c) minority -carrier flow in the emitter region
- d) Majority-carrier flow in the emitter region

- Q.4 Input impedance of MOSFET is
- less than that of FET but more than BJT
 - more than FET and BJT
 - more than FET but less than BJT.
 - Less than FET and BJT.
- Q.5 Convert $(312)_8$ into decimal
- $(201)_{10}$
 - $(202)_{10}$
 - $(203)_{10}$
 - $(204)_{10}$
- Q.6 How much input and output needed for de-multiplexer?
- May outputs to one input
 - One input one output
 - One input many outputs
 - None of these

SECTION-B

Note: Objective/ Completion type questions. All questions are compulsory. (6x1=6)

- Q.7 On increasing temperature, an extrinsic semiconductor behaves as _____.
- Q.8 Zener diode is always operated in _____ bias.

(2)

220933

- Q.9 In CE configuration, the input resistance is _____ and output resistance is _____.
- Q.10 FET is a bipolar device. (True/False)
- Q.11 Draw the symbol of OR gate.
- Q.12 Define latch.

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

- Q.13 Differentiate between intrinsic and extrinsic semiconductor.
- Q.14 Explain the working of PN junction diode.
- Q.15 Show that maximum efficiency in a half wave rectifier is 40.6% and ripple factor is 1.21
- Q.16 Write the advantage of FET over BJT.
- Q.17 Explain the working principle of n-channel FET.
- Q.18 Draw the truth table of NAND and NOT.
- Q.19 Explain the D/A converter.
- Q.20 Write the difference between encoder and decoder.
- Q.21 Convert $7BF_{16}$ to binary number.
- Q.22 Differentiate between half adder and full adder sequential circuit.

(3)

220933