

No. of Printed Pages : 4
Roll No.

220933

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 A semiconductor has

- a) negative temperature co-efficient of resistance
- b) positive temperature co-efficient of resistance
- c) constant temperature co-efficient of resistance
- d) none of the above

Q.2 A diode is

- a) unidirectional device
- b) bidirectional device
- c) any of the above
- d) none of the above

Q.3 In CB configuration the output V-I characteristics are drawn between

- a) V_{CB} and I_B
- b) V_{EB} and I_B
- c) V_{CB} and I_C
- d) any of the above

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Q.4 AFET is a

- a) bipolar transistor
- b) tripolar transistor
- c) unipolar transistor
- d) none of the above

Q.5 What is the binary subtraction of $101001 - 010110 = ?$

- a) 010011
- b) 100110
- c) 011001
- d) 010010

Q.6 The number of inputs in a half adder is?

- a) 8
- b) 2
- c) 11
- d) 32

SECTION-B

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

Q.7 In P-type semiconductor, electrons are _____ carries and holes are _____ carries.

Q.8 PIV stand for _____.

Q.9 A transistor can act as a switch. (True/False)

Q.10 Expand MOSFET.

Q.11 Draw the symbol of NOT gate.

Q.12 Define encoder.

SECTION-C

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

Q.13 Explain N-type extrinsic Semiconductor.

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- Q.14 Draw and explain the V-I characteristics of semiconductor diode.
- Q.15 Prove that the efficiency of full wave rectifier is 81.2% and ripple factor is 0.482.
- Q.16 Write the advantages of MOSFET over JFET.
- Q.17 Explain the FET as an amplifier.
- Q.18 Write the application of Zener diode.
- Q.19 Define Latch and flip-flop.
- Q.20 Draw the truth table of AND & XOR.
- Q.21 Write the difference between counter and register.
- Q.22 Explain the working of De-multiplexer.

SECTION-D

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

- Q.23 Differentiate among semiconductors, conductors and insulators with the help of energy band diagram.
- Q.24 Draw the circuit for Bridge rectifier and explain its working with the help of input and output wave forms.
- Q.25 Explain A/D converter and write its application also.