Q.18 Draw the circuit diagram of a transistor amplifier in CE configuration.

Q.19 Write about the truth table, logic diagram of a full adder.

Q.20 What is the difference between MUX and DEMUX?

Q.21 What do you understand by Race around condition of the flip-flop?

Q.22 Write a short note on shift registor.

SECTION-D

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

Q.23 Explain the difference insulator and semi-conductors using the energy-band diagrams?

Q.24 Write and draw the symbol, logical expression and truth table of all logic gates.

Q.25 Do at list eight points about comparison of BJT, JFET and a MOSFET.

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2nd Sem. / Instrumentation & Control Engg. Medical Electronics
Subject : Analogue and Digital Electronics

Time : 3 Hrs. M.M. : 60

SECTION-A

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

Q.1 In N-type semiconductor, there are

a) No majority carriers

b) Holes as majority carriers

c) immobile negative ions

d) Immobile positive ions

Q.2 When a pn junction is forward biased

a) electrons in the n-region are injected into the p-region.

b) holes in the p-region are injected into the n–region.

c) both a and b

d) None of these

Q.3 A MUX means

a) many into one device

b) one into many device

c) many into many device

d) None

Q.4 The number of nibbles in one byte is

a) 4 b) 3

c) 2 d) 1

Q.5 The arrow is a transistor symbol indicates the direction of current in

a) emitter b) base

c) collector d) none of these

Q.6 Which logic circuit has a memory

a) Combinational logic circuit

b) Sequential logic circuit

c) Both

d) None

SECTION-B

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

Q.7 The formula for current gain(alpha)=_____

Q.8 In the saturation region of a transistor, both the junctions are_____

Q.9 The name of universal gate are_____ and_____

Q.10 _____ flip-flop does not have race around condition.

Q.11 A 32:1 MUX has_____ select lines.

Q.12 A full adder can add _____ bits.

SECTION-C

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

Q.13 Write a short note on MOSFET.

Q.14 Derive the relation b/w α β and γ

Q.15 Write down the Comparison of CB, CE and CC Configurations of transistor.

Q.16 Write down the difference between analogue and digital signal.

Q.17 State the differences between zener breakdown and avalanche breakdown?