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B

DE-2930

First Year B. Sc. (Sem. I) Examination

March / April – 2016

Applied Electronics : Paper - I

(Component & Devices)

Time : Hours] [Total Marks : **50**

Instructions :

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ FIRST YEAR B. Sc. (SEM. 1)

Name of the Subject :

☛ APPLIED ELECTRONICS - 1

☛ Subject Code No. : 2 9 3 0 ☛ Section No. (1, 2,.....) : 1,2,3

Seat No. :

Student's Signature

(2) This exam contains 28 multiple choice questions.

(3) Choose only ONE most appropriate answer per question.

(4) Do not crease or fold the answer sheet.

(5) Q. 1 to 12 Multiple choice questions each carry 1 mark.
Q. 13 to 22 Multiple choice questions each carry 2 marks.
Q. 23 to 28 Multiple choice questions each carry 3 marks.

***O.M.R. Sheet* ભરવા અંગેની અગત્યની સૂચનાઓ આપેલ *O.M.R. Sheet*ની પાછળ છાપેલ છે.**

Important instructions to fillup O.M.R. Sheet is given on back side of the provided O.M.R. Sheet.

1 Linear Integrated circuit are :

(A) Memory chip

(B) Flip - Flop

(C) Operational amplifier

(D) Clock Chip

2 Providing Ohmic contact and interconnection by evaporating Almunium over the chip :

(A) Scribing

(B) Etching

(C) Metallization

(D) Dopping

3 Full Form of MOSFET :

(A) Methane Oxide Semiconductor Field Effect Transistor

(B) Metal Oxide Silicon Field Effect Transistor

(C) Metal Oxide Semiconductor Field Effect Transistor

(D) Metal Order Semiconductor Field Effect Transistor

4 In colour coding resistor, the fourth band indicates :

(A) None of these

(B) tolerance percent

(C) multiplier

(D) first digit

5 A circuit that converts ac in to dc is called :

(A) Filters

(B) Rectifiers

(C) Regulators

(D) Thyristors

6 Reverse current _____ very sharply after the Zener breakdown.

(A) slide

(B) fall

(C) rises

(D) decreases

7 Transition capacitance is prominent when Junction diode is :

(A) None of these

(B) forward bias

(C) combination of Forward and Reverse bias

(D) reverse bias

8 Diffusion capacitance is prominent in Junction diode when, is :

(A) None of these

(B) forward bias

(C) combination of Forward and Reverse bias

(D) reverse bias

9 Diffusion capacitance and transition capacitance are left out in _____ frequency model of Diode.

(A) None of these

(B) High

(C) Medium

(D) Low

10 Special purpose diode are :

(A) All of these

(B) Tunnel Diode

(C) Schottky Diode

(D) Varactor diode

11 Varactor diode is due to change in the _____ of diode.

(A) diffusion inductance

(B) transition capacitance

(C) diffusion capacitance

(D) resistance

12 Classification of IC by structure :

(A) All of these

(B) Monolithic IC

(C) Thick and thin film IC

(D) Hybrid or Multichip IC

13 You have three resistance of value 2 ohm, 3 ohm, and 6 ohm. Then an effective resistance of 4 Ohms can be obtained by connecting :

(A) 2Ω and 6Ω in parallel and 3Ω in series

(B) 3Ω and 6Ω in series and 2Ω in parallel

(C) 3Ω and 6Ω in parallel and 2Ω in series

(D) All in parallel

14 Two most commonly used semiconductor are _____ and _____.

(A) Copper, Almunium

(B) Germanium, Copper

(C) Silicon, Almunium

(D) Silicon, Germanium

15 In a pure semiconductor number of _____ produced at temperature to number of free _____.

(A) All of these

(B) holes, electron

(C) elements, compounds

(D) holes, elements

16 Algebraic summation of current at a junction is _____ and this law is called _____.

(A) Infinity, KCL

(B) Zero, KVL

(C) Infinity, KVL

(D) Zero , KCL

17 Algebraic summation of Voltage in a closed loop is _____ and this law is called _____.

(A) Infinity, KCL

(B) Zero, KVL

(C) Infinity, KVL

(D) Zero, KCL

18 A Battery has emf of 2 Volts when shorted gives a current of 4A. The terminal resistance of the battery is :

(A) None of these

(B) 4 Ohms

(C) 0.5 Ohms

(D) 2 Ohms

19 A certain wire has a resistance R, it is cut into two real parts and connected in parallel, the resistance of the combination is :

(A) 2R

(B) R/2

(C) R/4

(D) R/8

20 In Norton Equivalent circuit the current source is connected in Parallel with _____ and its unit is _____.

(A) Capacitance , Farad

(B) Resistance, Ohms

(C) Resistance, Micro Farad

(D) Admittance, Mho

21 A certain wire has a resistance of 1000 ohms and the voltage across the wire is 100 V the electric power in the wire is _____.

(A) 0.1 W

(B) I W

(C) 10 W

(D) 50 W

22 Classification of IC by function :

(A) Theoretical and Practical

(B) Analog and Digital

(C) Calculus and Integral

(D) Linear and Non-Linear

23 In an energy band diagram of Semiconductor the energy from lower to high is _____, _____ and _____ energy band.

(A) Active, Valance band, Forbidden gap

(B) Deactive, Valance band, Forbidden gap

(C) Conduction, Valance band, Forbidden gap

(D) Conduction, Forbidden gap, Valance band,

24 If α dc = 0.99 then, find β dc.

(A) 0.99

(B) 99

(C) 49

(D) 24

25 If β dc = 100 then, find α dc.

(A) 150

(B) .99

(C) 100

(D) 0.01

26 Find base current (IB) if transitor, If β dc = 50 and emitter current is 10 mA.

(A) 0.002 mA

(B) 20 mA

(C) 200 mA

(D) 0.2 mA

27 Monolithic Ic most common. The component are part of one _____. Transistor, Diodes, Resistor are easy to fabricate in a monolithic IC, but _____ and _____ are not practical.

(A) All of these

(B) Amplifier, Capacitor, Inductor

(C) Chip, Inductor, Capacitor

(D) Wafer, Inductor, Capacitor

28 A wave shapping circuit are _____ and _____, and made using _____.

(A) None of these

(B) Rectifiers , Filters, Regulators

(C) Transistors, Resistors, Diodes

(D) Clipping, Clamping, Diodes