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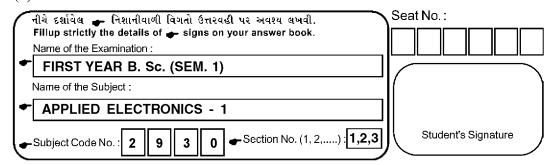
First Year B. Sc. (Sem. I) Examination

March / April – 2016

Applied Electronics : Paper - I

(Component & Devices)

Time :   Hours]   [Total Marks : 50

Instructions :

(1)

नीચे 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. Sheetની પાછળ છાપેલ છે.
Important instructions to fillup O.M.R. Sheet
is given on back side of the provided O.M.R. Sheet.

1 In colour coding resistor, the fourth band indicates :

(A) multiplier

(B) first digit

(C) None of these

(D) tolerance percent

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

(A) Regulators

(B) Thyristors

(C) Filters

(D) Rectifiers

3 Reverse current _____ very sharply after the Zener breakdown.

(A) rises

(B) decreases

(C) slide

(D) fall

4 Transition capacitance is prominent when Junction diode is :

(A) combination of Forward and Reverse bias

(B) reverse bias

(C) None of these

(D) forward bias

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

(A) combination of Forward and Reverse bias

(B) reverse bias

(C) None of these

(D) forward bias

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

(A) Medium

(B) Low

(C) None of these

(D) High

7 Special purpose diode are :

(A) Schottky Diode

(B) Varactor diode

(C) All of these

(D) Tunnel Diode

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

(A) diffusion capacitance

(B) resistance

(C) diffusion inductance

(D) transition capacitance

9 Classification of IC by structure :

(A) Thick and thin film IC

(B) Hybrid or Multichip IC

(C) All of these

(D) Monolithic IC

10 Linear Integrated circuit are :

(A) Operational amplifier

(B) Clock Chip

(C) Memory chip

(D) Flip - Flop

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

(A) Metallization

(B) Dopping

(C) Scribing

(D) Etching

12 Full Form of MOSFET :

(A) Metal Oxide Semiconductor Field Effect Transistor

(B) Metal Order Semiconductor Field Effect Transistor

(C) Methane Oxide Semiconductor Field Effect Transistor

(D) Metal Oxide Silicon Field Effect Transistor

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

(A) Resistance, Micro Farad

(B) Admittance, Mho

(C) Capacitance, Farad

(D) Resistance, Ohms

14 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) 10 W

(B) 50 W

(C) 0.1 W

(D) I W

15 Classification of IC by function :

(A) Calculus and Integral

(B) Linear and Non-Linear

(C) Theoretical and Practical

(D) Analog and Digital

16 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) $3\,\Omega$ and $6\,\Omega$ in parallel and $2\,\Omega$ in series

(B) All in parallel

(C) $2\,\Omega$ and $6\,\Omega$ in parallel and $3\,\Omega$ in series

(D) $3\,\Omega$ and $6\,\Omega$ in series and $2\,\Omega$ in parallel

17 Two most commonly used semiconductor are _____ and _____.

(A) Silicon, Almunium

(B) Silicon, Germanium

(C) Copper, Almunium

(D) Germanium, Copper

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

(A) elements, compounds

(B) holes, elements

(C) All of these

(D) holes, electron

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

(A) Infinity, KVL

(B) Zero , KCL

(C) Infinity, KCL

(D) Zero, KVL

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

(A) Infinity, KVL

(B) Zero, KCL

(C) Infinity, KCL

(D) Zero, KVL

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

(A) 0.5 Ohms

(B) 2 Ohms

(C) None of these

(D) 4 Ohms

22 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) R/4

(B) R/8

(C) 2R

(D) R/2

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

(A) Transistors, Resistors, Diodes

(B) Clipping, Clamping, Diodes

(C) None of these

(D) Rectifiers , Filters, Regulators

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

(A) Conduction, Valance band, Forbidden gap

(B) Conduction, Forbidden gap, Valance band,

(C) Active, Valance band, Forbidden gap

(D) Deactive, Valance band, Forbidden gap

25 If α dc = 0.99 then, find β dc.

(A) 49

(B) 24

(C) 0.99

(D) 99

26 If $\beta\,dc = 100$ then, find $\alpha\,dc$.

(A) 100

(B) 0.01

(C) 150

(D) .99

27 Find base current (IB) if transitor, If $\beta\,dc = 50$ and emitter current is 10 mA.

(A) 200 mA

(B) 0.2 mA

(C) 0.002 mA

(D) 20 mA

28 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) Chip, Inductor, Capacitor

(B) Wafer, Inductor, Capacitor

(C) All of these

(D) Amplifier, Capacitor, Inductor