

- Q.28 State and explain ohm's law.
 - Q.29 Explain the current flow through a N-type semiconductor at room temperature.
 - Q.30 What is P-N Junction diode? Write its mechanism of current flow.
 - Q.31 Explain distribution system in detail.
 - Q.32 What is earthing? Explain its importance.
 - Q.33 Explain working of Half-wave rectifier.
 - Q.34 Give advantage of electrical energy over other forms of energy.
 - Q.35 Explain De-Morgans's theorem.

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

- Q.36 Explain construction and working of 3-phase induction motor with the help of neat sketch.

Q.37 Write short note on:

 - a) PNP and NPN transistors
 - b) Active and passive components

Q.38 How foundations are classified? Explain any two types of foundations with neat sketch.

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**3rd Sem / Plastic Engineering/ Chem Engg (Spl. Paint Tech). Rubber Tech., Chem Engg. (Spl. Polymer Engg)
Subject:- Engg. Fundamentals**

Time : 3Hrs. M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

- Q.1 Ohm's law cannot be applied on _____
a) insulators b) conductors
c) semi-conductors d) small resistors

Q.2 The resistivity of a wire depends on _____
a) length b) diameter
c) material d) all of these

Q.3 Unit of resistance is _____.
a) ampere b) ohm
c) emf d) none of these

Q.4 Which of the following logic gates are known as universal gates?
a) NOR, NAND, XNOR
b) XOR, NOR, NAND
c) NOT, AND, OR
d) NOR, NAND

Q.5 A circuit breaker is a _____.

- a) Fuse
- b) switch
- c) Resettable protective device
- d) resistor

Q.6 In DOL fuses are provided to protect against

- a) Short circuit protection
- b) Over voltage
- c) Over current
- d) Over load

Q.7 In gases the flow of current is due to

- a) Electrons only
- b) Positive ions only
- c) Electrons and positive ions
- d) Electrons, positive ions and negative ions

Q.8 Temperature coefficient of resistance is expressed in terms of

- a) Ohms/ $^{\circ}\text{C}$
- b) Mhos/ohm $^{\circ}\text{C}$
- c) Ohms/ohm $^{\circ}\text{C}$
- d) Mhos/ $^{\circ}\text{C}$

Q.9 The filament of an electric bulb is made of

- a) Carbon
- b) Aluminium
- c) Tungsten
- d) Nickel

Q.10 The most commonly used semiconductor is _____

- a) Germanium
- b) Silicon
- c) Carbon
- d) Sulphur

SECTION-B

Note: Objective type questions. All questions are compulsory. (10x1=10)

Q.11 An ideal crystal diode has _____ forward resistance.

Q.12 Define power factor.

Q.13 What is truth table?

Q.14 Give one advantage of full wave rectifier.

Q.15 What is meant by dressing of stone.

Q.16 Draw symbol for NOT gate.

Q.17 What is overload.

Q.18 C.R.O stands for _____.

Q.19 Standard size of break is _____.

Q.20 Name two types of timber.

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 Explain different type of foundations.

Q.22 Explain A/D converter.

Q.23 Give applications of PLC.

Q.24 Explain brick masonry.

Q.25 Explain C.R.O and its uses.

Q.26 What are the requirements of good building stone.

Q.27 Write basic defects in timber.