AAFAQ ACADEMY KASUR

Physics Book II **Chapter (17) NEW** **Objective + Subjective**

SOLD STATE PHYSICS

Name : _____ Roll No: (in words) _____

OBJECTIVE

Time: 10 Minutes **Marks: 10**

Note: Write your roll No. in space provided. Over-writing, cutting, erasing, using of lead pencils will result into loss of marks.

Q.1: Encircle the correct answers.

i. An ordinary glass gradually softness into a paste like state before it becomes a very viscous liquid which is possible at:
a) 900^0C
b) 600^0C
c) 800^0C
d) 100^0C

ii. The dimension of stress is:
a) $[MLT^{-1}]$
b) $[ML^{-1}T]$
c) $[ML^{-1}T^{-1}]$
d) $[ML^{-1}T^{-2}]$

iii. The conductors having the conductivity of the order of:
a) $10^{-4}(\Omega - m)^{-1}$
b) $10^{7}(\Omega - m)^{-1}$
c) $10^{-10}(\Omega - m)^{-1}$
d) $10^{-7}(\Omega - m)^{-1}$

iv. The material whose resistivity becomes zero below a certain temperature:
a) Conductors
b) Semi conductors
c) Super conductors
d) Insulators

v. Recently a complex crystalline structure known as yttrium barium copper oxide (Y Ba_2 Cu_3 O_7) have reported to become super conductor at:
a) 163 K
b) 169 K
c) 200 K
d) 100 K

vi. Curie temperature is:
a) Different for chromium oxide and cobalt
b) Same for chromium oxide and cobalt
c) Same for iron and cobalt
d) None of these

vii. The curie temp for iron is about:
a) 800^0C
b) 740^0C
c) 750^0C
d) 650^0C

viii. The domain theory of magnet is important to explain the behavior of:
a) Diamagnets
b) Paramagnets
c) Ferromagnets
d) All of these

ix. At 0 K, a piece of silicon is a:
a) Conductor
b) Semi-conductor
c) Insulator
d) All

x. Coercive force is used to:
a) Demagnetize the material
b) Magnetize the material
c) Extend it
d) None of these

SUBJECTIVE

Time: 30 min. **Marks: 20**

Q.2: Write the short answers. **(2×6)**

i. Distinguish between crystalline, amorphous and polymeric solids.
ii. Define stress and strain. What are their SI units?
iii. Differentiate between tensile, compressive and shear modes of stress and strain.
iv. Define modulus of elasticity.
v. Show that the units of modulus of elasticity and stress are the same. Also discuss its three kinds.
vi. What is meant by strain energy?
vii. Write a note on superconductors.
viii. What is meant by hysteresis loss? How is it used in the construction of a transformer?

Note: Long questions:

Q.3 **(a)** Describe the magnetic properties of solid. Describe the types of magnets. (5)

(b) A 1.0 m long copper wire is subjected to stretching force and its length increases by 20 cm. Calculate the tensile strain and the percent elongation which the wire undergoes. (3)