Test Attempt report of - **KARTIKEYA NISAL** (Roll No - **3723021110**)

Test Details

School name	Standard	Division	Medium	Subject
Electronics & Tele Communication Engineering	FYENTC-SEM-I	G	English	Applied Physics

Test Name	Date of Test	Attempt Date	Test Code	Test Duration
Unit -2	Nov 8th, 2023	Nov 8th, 2023	T-7-1	25 Minutes

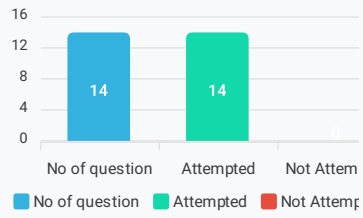
Teacher	Evaluation Mode	Evaluation Date	Evaluated By	Remark
Dr. Anuradha Pawar	Auto	Nov 8th, 2023	--	--

Test Statistics

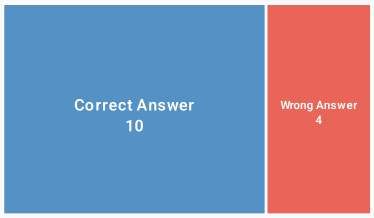
Congratulations KARTIKEYA!
You are passed in test

Your Score
11 / 15

Question Attempt Status



Correct vs Wrong Answer Count



*(From Attempted Only)

Total duration Vs Time Spent

Questions and Answers

Q.1 Which of the following statement about superconductor is Not true?

Options-

1. A type I superconductor is completely diamagnetic
2. A type-II superconductor exhibits meissner effect upto the second critical magnetic field (Hc2) ✗
3. A type-II superconductor exhibits zero resistance upto the second critical magnetic field
4. Both type-I and type-II superconductors exhibits sharp fall in resistance at the superconducting transition temperature ✓

Q.2 In an n-type semiconductor, as the donor concentration Nd increases, the fermi level Ef:

Options-

1. Remains unaltered
2. Moves towards the conduction band ✓
3. Move towards the center of forbidden energy gap
4. May or may not move depending on temperature

Q.3 The major difference between the nano materials compared to the bulk form is the big fraction of the total number of atoms on the surface.

Options-

1. true ✓
2. false
3. F
4. D

Q.4 The critical magnetic field for a solid in superconducting state _____

Options-

1. Does not depend upon temperature
2. Increase if the temperature increases
3. Increases if the temperature decreases ✓
4. Does not depend on the transition temperature

Q.5 **A external magnetic field of magnitude H is applied to a type-I superconductor at a temperature below the transition point. Then which one of the following statement is Not true for H less than the critical field Hc -**

Options-

1. The sample is diamagnetic
2. Its magnetisation varies linearly with H ✗
3. The lines of magnetic induction are pushed out from the sample
4. The sample exhibits mixed states of magnetization near Hc ✓

Q.6 **In Hall effect, a difference voltage is produced _____ to electric current in the conductor, and to an applied _____ field perpendicular to the current.**

Options-

1. Parallel, electric
2. Transverse, electric
3. Parallel, magnetic
4. Transverse, magnetic ✓

Q.7 **For a conventional superconductor, which of the following statement is Not true**

Options-

1. Specific heat is discontinuous at transition temperature Tc
2. The resistivity fall sharply at Tc
3. It is diamagnetic below Tc
4. It is paramagnetic below Tc ✓

Q.8 **For intrinsic semiconductor (germanium) at 300 K, ni = 2.4 x 10^19 m^-3, mobility of electron Un = 0.39 m^2 v^-1 s^-1 and mobility of holes Up = 0.19 m^2 v^-1 s^-1. the conductivity of sample is found to be ----**

Options-

1. 2.42 mho / m
2. 2.22 mho / m ✓
3. 2.82 mho / m ✗
4. 1.92 mho / m

Q.9 **The specific heat of superconducting material shows an abrupt change at T = Tc jumping to a large value for _____**

Options-

1. T < Tc ✓
2. T > Tc
3. T = Tc
4. None of these

Q.10 **Hall effect is useful for the measurement of semiconductor's**

Options-

1. Mobility, carrier concentration and temperature
2. Type (n-type or p-type), conductivity and temperature
3. type (n-type or p-type), mobility and carrier concentration ✓
4. mobility, conductivity and temperature

Q.11 **Which of the following statement is valid with respect to fermi level of a semiconductor. Efi - Fermi level in intrinsic semiconductor Efp - Fermi level of P-type semiconductor Efn - Fermi level of n-type semiconductor**

Options-

1. For P-type semiconductor, fermi level lies close to conductor band.
2. If Nn = Np, the intrinsic Fermi level (Efi) lies in the middle of the conduction and valance band. ✓
3. For N-type semiconductor, as temperature increases Efn start moving away from the center of forbidden band
4. As doping concentration increases in n-type Efn moves closer to Efi

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Q.12 **If the mobility of electron in an n-type semiconductor is 3850 cm^2 v^-1 s^-1, then determine the density of donor atoms to be added to intrinsic germanium specimen to make it n-type semiconductor of conductivity 5 mho/cm ____**

Options-

1. 0.81 x 10^16 / cm^3 ✓
2. 0.81 x 10^14 / cm^3
3. 0.81 x 10^12 / cm^3
4. 0.81 x 10^9 / cm^3

Q.13 **Calculate the number of acceptor atoms that need to be doped in germanium sample to obtain the resistivity of 8 Ω cm. (Given: μ = 1600 cm2/V. s)**

Options-

1. 1.883 x 1014 per cm3
2. 2.883 x 1014 per cm3 ✗
3. 3.883 x 1014 per cm3
4. 4.883 x 1014 per cm3 ✓

Q.14 **The Hall coefficient of a specimen of doped silicon is found to be 3.66 x 10-3 m3/c. The resistivity of the specimen is 8.93 x 10-3Ω-m. Determine the mobility of charge carriers**

Options-

1. 0.41 m2/V-s ✓
2. 0.31 m2/V-s
3. 0.21 m2/V-s
4. 0.11 m2/V-s

Report Generated Date & Time - **Feb 21st, 2024 07 15 23 PM**

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