Physics ECAT Pre Engineering Chapter 17 Physics of Solid Online Test

Sr	Questions	Answers Choice
1	Synthetic materials fall into the category of	A. crystalline solids B. amorphous C. polymeric solids D. all of them
2	The critical temperature of aluminium is	A. 1.18 K B. 4.2 K C. 3.72 K D. 7.2 K
3	When a large number of atoms are brought close to one another to form a solid, each energy level of an isolated atom splits into sub-levels, called	A. energy bands B. energy shells C. states D. all of them
4	Every crystalline solid has	A. definite melting point B. different melting points C. may or may not be definite D. none of them
5	The domains are of macroscopic size of the order of	A. centimeters B. meters C. millimeters D. nanomneters
6	When the shear stress and shear stain are involved, then their ratio is called	A. Young's modulus B. Bulk modulus C. Shear modulus D. all of them
7	Amorphous solids:	A. Have definite melting points B. Are called glassy solids C. Have no definite melting point D. Both (B) and (C) E. Both (A) and (C)
8	An ordinary glass gradually softens into a 'paste -like' state before it becomes a very viscous liquid. It happens almost at:	A. 800^oC B. 500^oC C. 300^oC D. 100^oC E. None of these
9	In a semi-conductor material, current flows due to	A. positive charge B. negative charge C. both of them D. none of them
10	The SI unit of strain is	A. N B. Dynes C. Pascal D. Dimensionless
11	If the stress increased beyond the elastic limit of the material. the deformation produced in the material will be	A. permanent B. temporary C. either of them D. none of them
12	Which of the following can become a good permanent magnet	A. iron B. steel C. both of them D. none of them
13	An atom in which there is a resultant magnetic field, behaves like a tiny magnet and is called as	A. magnetic B. magnetic dipole C. magnetic monopole D. none of them
14	The neighbours of every molecule in crystalline solids are arranged in	A. an irregular manner B. a regular manner C. any manner D. none of them
		A. easily oriented along external field and do not return to original random positions

15	In a soft iron, domains are	B. easily oriented along external field and readily returns to originally random position C. do no oriented along external field and also do not returns to originally random position D. none of them
16	The materials in which there are plenty of free electrons for electrical conduction are known as	A. conductors B. insulators C. semi-conductors D. all of them
17	The materials in which valence electrons are bound very tightly to their atoms and are not free, are known as	A. conductors B. insulators C. semi-conductors D. all of them
18	The temperature at which the vibrations become so great that structure of the Crystal breaks up, is called:	A. Critical temparature B. Temperature of vaporization C. Melting point D. Both (A) and (C) E. Both (A) and (B)
19	A semi-conductor in its extremely pure form is known as	A. extrinsic semi-conductor B. intrinsic semi-conductor C. either of them D. none of them
20	The units of modulus of elasticity are	A. Nm⁻² B. Nm C. ms⁻¹ D. Pascal
21	The molecules or ions in a crystalline solids are	A. static B. not static C. randomly moving D. all of them
22	The substances which break just after the elastic limit is reached, are known as	A. brittle substances B. ductile substances C. plastic substances D. elastic substances
23	A structure of polymeric solid is:	A. An ordered structure B. A disordered structure C. Intermediate between order and disorder D. Any of these E. None of these
24	Glass and high carbon steel are the examples of	A. brittle substances B. ductile substances C. plastic substances D. elastic substances
25	The magnetism produced by electrons within an atom can arise from	A. electrons orbiting the nucleus B. electrons posses a spin C. both motions D. none of these motions
26	A unit cell is smallest basic structure which is:	A. One dimensional B. Two dimensional C. Three dimensional D. Four dimensional E. None of these
27	In the stress-strain graph, stress is increased linearly with strain until a point is reached, this point is known as	A. plastic limit B. plastic deformation C. proportional limit D. elastic behaviour
28	When a stress changes length, it is called the	A. compressional stress B. tensile stress C. shear stress D. any one of them
29	Arsenic, antimony and phosphorus are the elements from	A. third group B. fourth group C. fifth group D. none of them
30	Tick the one which is not polymer solid:	A. Zirconia B. Polythene C. Nylon D. Synthetic rubber E. None of these
		A. low temperature superconductor

31	Any superconductor with critical temperature above 77 K, is referred as	A. low temperature superconductor B. high temperature superconductor C. very low temperature superconductor D. none of them
32	when the deformation produced in the material become permanent, this type of behaviour is called	A. proportionality B. elasticity C. plasticity D. none of them
33	The whole structure obtained by the repetition of unit cells is called:	A. Crystal lattice B. Amorphous solid C. Polymeric solid D. Polysterne E. None of these
34	The charged nucleus of an atom itself spins its magnetic field	A. equal to the field produced by orbital electrons B. greater than the field produced by orbital electrons C. much weaker than the field produced by orbital electrons D. none of these
35	The substance in which atoms are so oriented that the field produced by spin and orbital motion of the electrons might add up to zero,are called	A. diamagnetic substances B. ferromagnetic substances C. paramagnetic substances D. all of them
36	Examples of crystalline solids are:	A. Cooper B. NaCl C. Zirconia D. Both (A) and (B) E. All of these
37	The solids which has structure in-between order and disorder are called	A. amorphous solids B. polymeric solids C. crystalline solids D. all of them
38	There are some whose resistivity becomes zero below a certain temperature, called	A. absolute zero B. 0>°C C. critical temperature D. lower fixed point
39	Glass is an example of	A. crystalline solid B. amorphous solid C. polymeric solid D. none of them
40	Which of the following theory completely explain the three types of materials	A. Bohr model of electron distribution B. Rutherford atomic model C. Pauli's exclusion principle D. energy band theory
41	Amorphous solids are also called as	A. crystalline solids B. polymeric solids C. glassy solids D. any one of them
42	The results of mechanical tests are usually expressed in terms of	A. stress B. strain C. stress and strain D. neither strees nor strain
43	Zirconia is classified as:	A. Ceramic solid B. Ionic compound C. Metal D. Either (A) or (B) E. Either (B) or (C)
44	The bands below the valence band are	A. completely filled and play active part in conduction process B. completely filled and plays no part in conduction process C. completely filled and play active part in conduction process D. not completely filled and play no part in conduction process
45	The bonding between the semi-conductor materials is	A. covalent B. ionic C. either of them D. none of them
		A. Decrease the rise in temprature

46	Each atom in a metal crystal vibrates about a fixed point with an amplitude that:	B. Is not affected by rise in temprature C. Increase with rise in temprature D. Both (B) and (C) E. None of these
47	Electrons of an isolated atom are bound to the nucleus, and	A. can only have distinct energy level B. can only have same energy level C. may or may not have distinct energy levels D. none of these
48	In the phenomenon of hysteresis	A. magnetism leads the magnetising current B. magnetism lags behind the magnetising current C. meganetism goes along the magnetising current D. none of them
49	The arrangement or molecules or atoms in a crystalline solid can be studied by using:	A. Chemical methods B. Neutrons C. X-ray techniques D. Copper atoms E. Both (A) and (B)
50	The electrons occupying the conduction band are known as	A. conduction electrons B. free electrons C. both of them D. none of them
51	The smallest three dimensional basic structure is called as:	A. An atom B. Unit cell C. Crystal lattice D. Polymer E. None of these
52	The critical temperature of mercury is	A. 1.18 K B. 4.2 K C. 3.72 K D. 7.2 K
53	Ferromagnetic substances lose their magnetism when heated above a certain temperature, known as	A. critical temperature B. curie temperature C. high temperature D. fixed temperature
54	In case of the three dimensional deformation, when volume is involved, the ratio of applied stress to volumetric strain is called	A. Young's modulus B. Bulk modulus C. Shear modulus D. all of them
55	There is a regular arrangement of molecules in a	A. amorphous solids B. polymeric solids C. crystalline solids D. none of them
56	Substances which break just after the elastic limit is reached, are known as	A. brittle substances B. ductile substances C. plastic substances D. elastic substances
57	The size of the domain is such that they can contain	A. 10²to 10⁴atoms B. 10⁴ to 10⁸atoms C. 10⁸to 10¹²atoms D. 10¹²to 10¹⁶atoms
58	Experiments revealed that the ratio of the stress to the strain is a constant value for	A. different material B. all materials C. a given material D. all of them
59	The SI unit of stress is	A. N/m² B. Nmc C. dynes/m D. N
60	When a stress changes the shape, it is called the	A. compressional stress B. tensile stress C. shear stress D. any one of them
61	In a semi-conductor material, the total current is	A. only the +ve current B. only the electronic current C. sum of +ve and electronic current

		D. all of them
62	The modulus of elasticity can be written as	A. stress x strain B. strain/stress C. 1/2 x stress x strain D. stress/strain
63	When relatively simple molecules are chemically combined into massive molecules, the reaction is called:	A. Fission reaction B. Fusion reaction C. Polymerization D. Any of these E. None of these
64	Amorphous solids are also more like	A. crystalline solids B. gases C. liquids D. any one of them
65	Lead, copper and wrought iron are examples of	A. brittle substances B. ductile substances C. plastic substances D. elastic substances
66	The valence band of an atom in a solid	A. is always empty B. may or may not be empty C. can never be empty D. none of them
67	Tick the one which is not a crystalline solid:	A. Zirconia B. Glass C. Copper D. Ceramic solid E. An ionic compound
68	Under the elastic region, the deformation produced in the material, the deformation produced in the material will be	A. permanent B. temporary C. either of them D. none of them
69	Within each domain, the magnetic field of all the spinning electrons are	A. parallel B. antiparallel C. perpendicular D. all of them
70	The ratio of linear stress/linear strain is called as	A. Yong's modulus B. Bulk modulus C. Shear modulus D. Modulus
71	In a cubic crystal, All solids meet at:	A. 60^o B. 90^o C. 109^o D. 30^o E. 10^o
72	Semi-conductor elements have atoms with	A. 2 valence electrons B. 3 valence electrons C. 4 valence electrons D. 5 valence electrons
73	The curie temperature of iron is about	A. 250°C B. 500°C C. 750°C D. 1000°C
74	The maximum stress that a material can withstand, is known as	A. plastic point B. elastic limit C. yield point D. ultimate tensile strength
75	The ability of the body to return to its original shape is called	A. deformation B. stretching C. compressing D. elasticity
76	The force which maintain the strict long-range order between atoms of a crystalline solid is the:	A. Nuclear force B. Cohesive force C. Adhesive force D. Coulomb force E. None of these

77	The vast majority of solids are in the form of	A. amorphous structure B. polymeric structure C. crystalline structure D. all of them
78	Examples of polymeric substances are:	A. Plastic B. Synthetic rubbers C. Zirconia D. All of these E. Both (A) and (B)
79	Whenever a covalent bond is broken in an intrinsic semi-conductor	A. hole is created B. an electron is created C. an electron-hole pair is generated D. all of them
80	When a silicon crystal is doped with a pentavalent element, such an extrinsic semi-conductor is called	A. p-type semi-conductor B. n-type semi-conductor C. either of them D. none of them
81	The electrons in the outermost shell of an atom are called	A. core electrons B. valence electrons C. high energy electrons D. none of them
82	The transition from solid state to liquid state is:	A. Abrupt B. Slow C. Continous D. Discontinous E. Both (A) and (D)
83	On heating, glass gradually softens into a paste like before it becomes a very viscous liquid at almost	A. 600°C B. 7600°C C. 800°C D. 900°C
84	The cohesive forces between atoms, molecules or ions in crystalline solids maintain the strict	A. short range order B. long range order C. both of them D. none of them
85	The amplitude of oscillation of each atom in a metallic crystal rises with the	A. rise in temperature B. decrease in temperature C. even temperature remains constant D. all of them
86	The force applied on unit area to produce any change in the shape, volume or length of a body is known as	A. strain B. elasticity C. stretching D. stress
87	The crystalline structure of NaCl is	A. rectangular B. hexagonal C. tetrahedral D. cubical
88	Recent studies of ferromagnetism have shown that there exists in ferromagnetic substances small regions called	A. tiny regions B. domains C. vectors D. none of them
89	The greatest stress that a material can endure without losing the proportionality between stress and strain is called	A. plastic line B. breaking point C. proportional limit D. none of them
90	When a silicon crystal is doped with a pentavalent element, then the atom of the pentavalent element is known as	A. acceptor B. donor C. either of them D. none of them
91	In metallic crystals which of the following thing remains constant	A. amplitude of oscillations B. temperature of solid C. average atomic positions D. all of them
92	The first super conductor was discovered in	A. 1811 B. 1890 C. 1901 D. 1911
		A. One dimesional B. Two dimensional

93	The pattern of crystalline solid is:	B. Two dimensional C. Three dimensional D. None of these E. Either (A) or (B)
94	The number of different crystals systems based on the geometrical arrangement of their atoms and the resultant geometrical structure are	A. 5 B. 7 C. 9 D. 14
95	When small number of atoms from some other suitable element is added to the semi-conductor material, then this process is known as	A. impurification B. adding C. doping D. extrinsivity
96	The smallest three dimensional basic structure in a crystalline solid is called	A. lattice point B. crystal lattice C. cubic crystal D. unit cell
97	Which of the following can become a good temporarily magnet	A. iron B. steel C. both of them D. none of them
98	Each atom in metal crystal:	A. Remains fixed B. Vibrates about a fixed point C. Moves randomly D. Rotates about center of a crystal E. None of these
99	Polymers are the chemical combination of carbon with:	A. Nitrogen B. Oxygen C. Hydrogen D. All of these E. None of these
100	The ratio of shearing stress/shearing strain is called as	A. Modulus B. Pascal modulus C. Hooker's modulus D. Shear modulus
101	In the doping process, the ratio of the doping atoms to the semi conductor atom is	A. 1 to 10 B. 1 to 10³ C. 1 to 10⁶ D. 1 to 10⁹
102	The word amorphous means:	A. Without any structure B. With definite structure C. Regular arrangement of molecules D. Both (B) and (C) E. None of these
103	Recently a complex crystalline structure known as Yetrium Barium Copper Oxide have been reported to become superconductor at	A. 125 K B. 25 K C. 263 K D. 163 K
104	The critical temperature of tin is	A. 1.18 K B. 4.2 K C. 3.72 K D. 7.2 K
105	Crystalline solids are in the form of:	A. Metals B. Ionic Compounds C. Ceramics D. Both (A) and (B) E. All of these
106	Polymeric solids have	A. low specific gravity B. high specific gravity C. either of them D. none of them
107	The substance in which atoms cooperate with each other in such a way so as to exhibit a strong magnetic effect, are called	A. diamagnetic substances B. ferromagnetic substances C. paramagnetic substances D. all of them
108	The conduction band in a solid	A. may be empty B. cannot be empty C. should be filed D. all of them
109	The measure of the deformation in a solid when stress is applied to its is called	A. elastic constant B. young's modulus C. strain D. elasticity
		A. Order to disorder

110	The transition from solid to liquid is actually from:	A. Order to disorder B. Disorder to order C. Order to order D. Disorder to disorder E. None of these
111	The band above the valence band is called	A. high energy band B. conduction band C. empty band D. none of them
112	The pattern of NaCl particles have a shape which is :	A. Cubic B. Body centred cubic C. Simple cubic D. face centred E. Both (A) and (C)
113	The doped semi-conductor materials are known as	A. intrinsic semi-conductor B. extrinsic semi-conductor C. either of them D. none of them
114	The substances in which, atom are so oriented that their fields support each other and the atoms behave like tiny magnets, are called	A. diamagnetic substances B. ferromagnetic substances C. paramagnetic substances D. all of them
115	The solids are classified as:	A. Metals B. Crystalline C. Amorphous D. Polymeric E. All except (A)
116	Above the curie temperature, iron becomes	A. ferromagnetic B. paramagnetic C. diamagnetic D. any one of them
117	In crystalline solids, atoms are held about their equilibrium positions depending upon the strength of:	A. Adhesive force B. Nuclear forces C. Inter atomic cohesive force D. Electromagnetic force E. None of these