Program: FE Engineering

Curriculum Scheme: Revised 2012

Examination: Semester: I

Course Code: _FEC102____and Course Name: _Applied Physics I___

Time: 1hour Max. Marks: 50

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Note to the students:- All the Questions are compulsory and carry equal marks .

Q1.	Crystalline Solids Are?
Option A:	Regular repeated three dimensional pattern of atom.
Option B:	Irregular repeated three dimensional pattern of atom.
Option C:	Have short range of order.
Option D:	Isotropic in nature.
Q2.	The parameter of Cubic Systems Are?
Option A:	$a \neq b \neq c \quad \alpha = \beta = \gamma = 90^0$
Option B:	$a \geq b \geq c \quad \alpha = \beta = \gamma = 90^0$
Option C:	$a = b = c \quad \alpha = \beta = \gamma = 90^0$
Option D:	$a = b \neq c \quad \alpha = \beta = \gamma = 90^0$
Q3.	The Co-ordination number of BCC is ?
Option A:	6
Option B:	12
Option C:	4
Option D:	8
Q4.	Which of the following is Non-Crystalline Solid?
Option A:	NaCl
Option B:	CaF_2
Option C:	Glass
Option D:	CsCl
Q5.	The critical radius ratio of Ligancy 3 is?
Option A:	0.002 – 0.155
Option B:	1.0
Option C:	0.414 – 0.732
Option D:	0.155 – 0.225
Q6.	The Bragg's Law is $n\lambda = 2d\sin\theta$

Option A:	d is atomic radius.
Option B:	d is integer number.
Option C:	d is interplanar spacing.
Option D:	d is interfacial angle.
Q7.	In Bragg's Spectrometer Graph represents?
Option A:	Intensity vs Glancing angle
Option B:	Wavelength vs Glancing angle
Option C:	Frequency vs Glancing angle
Option D:	Voltage vs Glancing angle
Q8.	The Frenkel Defect as well as Schottky Defect are observed in crystal ?
Option A:	AgCl
Option B:	NaCl
Option C:	$MgCl_2$
Option D:	AgBr
Q9.	The vacancy defects are
Option A:	Line Defect
Option B:	Surface Defect
Option C:	Volume Defect
Option D:	Point Defect
Q10.	The mobility of electrons is given by
Option A:	$\mu = v_d / E$
Option B:	$\mu = \sigma / ne$
Option C:	$\mu = \sigma R_h$
Option D:	$\mu = v_d E$
Q11.	The correct statement of Fermi Level is
Option A:	The Highest Energy Level occupied by electrons at zero degree absolute.
Option B:	The Highest Energy Level occupied by electrons at highest degree absolute.
Option C:	The Lowest Energy Level occupied by electrons at zero degree absolute
Option D:	The Middle Energy Level occupied by electrons at zero degree absolute
Q12.	When $T > 0^0$ K Fermi Dirac Function is
Option A:	2
Option B:	1.5
Option C:	0.5
Option D:	1
Q13.	In intrinsic semiconductor
Option A:	$n_e = n_h \neq n_i$
Option B:	$n_e = n_h = n_i$
Option C:	$n_e + n_h = n_i$

Option D:	$n_e - n_h = n_i$
Q14.	In p-type semiconductor the majority of carriers are
Option A:	electrons
Option B:	electrons and holes
Option C:	proton
Option D:	holes
Q15.	The application of Hall effect is
Option A:	To identify semiconductor (p-type or n-type)
Option B:	To identify temperature of semi conductor
Option C:	To identify wavelength of semiconductor
Option D:	To identify thickness of material
Q16.	In which region no free electrons and holes are found in p-n junction ?
Option A:	p region
Option B:	n region
Option C:	Depletion region
Option D:	Advanced region
Q17.	The meaning of LED is
Option A:	LASER EMITTED DIODE
Option B:	LIGHT EMITTING DIODE
Option C:	LIGHT EVAPORATION DIODE
Option D:	LIGHT EMITER DIODE
Q18.	The Dielectric material is
Option A:	Mica
Option B:	Copper
Option C:	Aluminium
Option D:	Gold
Q19.	The Flux density is given by $D = \varepsilon_O \varepsilon_r E$, the correct value of ε_O is?
Option A:	10.5×10^{-12} F/m
Option B:	8.854×10^{-12} F/m
Option C:	9.09×10^{-11} F/m
Option D:	6.623×10^{-11} F/m
Q20.	Which substance has negative magnetic susceptibility?
Option A:	ferromagnetic
Option B:	paramagnetic
Option C:	diamagnetic
Option D:	ferrimagnetic
Q21.	Soft magnetic material has

Option A:	Low Hysteresis Loss
Option B:	High Hysteresis Loss
Option C:	High coercivity
Option D:	Low susceptibility
Q22.	Sabine's Formula in Acoustic
Option A:	T = 0.151V/A
Option B:	T = 0.161V/A
Option C:	T = 0.161A/V
Option D:	T = 0.2A/V
Q23.	The ideal absorption coefficient per meter sq. at 500 Hz for open window is
Option A:	0.2
Option B:	0.85
Option C:	1.0
Option D:	2.0
Q24.	Range of Ultrasonic waves is
Option A:	Below 20 Hz
Option B:	Above 20 Hz
Option C:	Below 1 Hz
Option D:	Above 20 kHz
Q25.	Which of the following is the correct application of Ultrasonic waves ?
Option A:	echo-sounding
Option B:	crystal identification
Option C:	Rectifier
Option D:	X - Ray application