Course/Branch :B.E/EEE /	**Year / Semester** :II/III	Format No.	NAC/TLP-07a.13
Subject Code :EE8391	**Subject Name** :Electromagnetic Theory	Rev. No.	02
Unit No :2	**Unit Name** :**Electrostatics-II**	Date	30.09.2020

OBJECTIVE TYPE QUESTION BANK

S. No.	Objective Questions (MCQ /True or False / Fill up with Choices)	BTL
1.	The ability of charged bodies to exert force on 6ne another is attributed to the existence of (a)electrons (b)protons (c)neutrons (**d)electric**	L1
2.	A field line and an equipotential surface are (a)**always parallel** (b)always at 90° (c)inclined at any angle 0 (d)none of the above	L2
3	A capacitor stores 0.24 coulombs at 10 volts. Its capacitance is **(a) 0.024 F** (b) 0.12 F (c)0.6 F (d)0.8 F	L3
4.	If three 15 uF capacitors are connected in series, the net capacitance is **(a) 5 uF** (b) 30 uF (c)45 uF (d)50 uF	L3
5	If three 10 uF capacitors are connected in parallel, the net cararitance is (a)20 uF **(b)30 uE** (c)40 uF (d)5 uF	L3
6.	A dielectric material must be (a)resistor **(b)insulator** (c)good conductor (d)semiconductor	L2
7.	The capacitance of a capacitor is not affected by (a) distance between plates (b) area of plates **(c)thickness of plates** (d)all of the above	L1

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8.	Voltage applied across a ceramic dielectric produces an electrolytic field 100 times greater than air. What will be the value of dielectric constant ? (a)50 **(b) 100** (c) 150 (d) 200	L4
9.	The dissipation factor of a good dielectric is of the order of **(a) 0.0002** (b) 0.002 (c) 0.02 (d) 0.2	L2
10.	Which of the following expression is correct for electric field strength ? **(a)E = D/E** (b)E = D2/t (c)E = jtD (d)E= nD2	L1
11.	Which of the following materials has the highest value of dielectric constant? (a)Glass (b)Vacuum **(c)Ceramics** (d)Oil	L1
12.	The sparking between two electrical contacts can be reduced by inserting a **(a) capacitor in parallel with contacts** (b) capacitor in series with each contact (c)resistance in line (d)none of the above	L1
13.	The absolute permittivity of free space is given by (a) 8.854 x 1(T9 F/m) **(b) 8.854 x 1(T10 F/m)** (c) 8.854 x KT11 F/m (d) 8.854 x 10"12 F/m	L2
14.	Dielectric constant for mica is nearly (a) 200 (b) 100 **(c)3 to 8** (d)1 to 2	L2

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15.	Dielectric strength of mica is (a)10 to 20 kV/mm (b)30 to 50 kV/mm **(c)50 to 200 kV/mm** (d)300 to 500 kV/mm	L2
16.	In free space, the Poisson equation becomes a) Maxwell equation b) Ampere equation **c) Laplace equation** d) Steady state equation	L1
17.	Poisson equation can be derived from which of the following equations? **a) Point form of Gauss law** b) Integral form of Gauss law c) Point form of Ampere law d) Integral form of Ampere law	L1
18.	Calculate the electric field intensity of a line charge of length 2m and potential 24V. a) 24 **b) 12** c) 0.083 d) 12.67	L2
19.	By method of images, the problem can be easily calculated by replacing the boundary with which polygon? a) Rectangle b) Trapezoid c) Square **d) Triangle**	L1
20.	When the dielectric is homogeneous,the potential gradient is (**a)uniform** (b)non-uniform (c)zero (d)any of the above	L1
21.	Identify which type of polarisation depends on temperature. a) Electronic b) Ionic **c) Orientational** d) Interfacial	L2

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22.	In isotropic materials, which of the following quantities will be independent of the direction? **a) Permittivity** b) Permeability c) Polarisation d) Polarizability	L2
23.	When a dielectric loses its dielectric property, the phenomenon is called a) Dielectric loss **b) Dielectric breakdown** c) Polarisation d) Magnetization	L2
24.	Dielectric strength of a material depends on (a)moisture content (b)temperature (c)thickness (**d)all of the above**	L1
25.	Find the electric field if the surface density at the boundary of air is 10^{-9}. a) 12π b) 24π **c) 36π** d) 48π	L4
26.	Find the flux density at the boundary when the charge density is given by 24 units. a) 12 **b) 24** c) 48 d) 96	L3
27.	The electric flux density of a surface with permittivity of 2 is given by 12 units. What the flux density of the surface in air? a) 24 **b) 6** c) 1/6 d) 0	L3
28.	Find the permittivity of the surface when a wave incident at an angle 60 is reflected by the surface at 45 in air. a) 1.41 b) 3.5 c) 2.2 **d) 1.73**	L3

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29.	A material with zero resistivity is said to have a) Zero conductance b) Infinite conductance **c) Zero resistance** d) Infinite resistance	L1
30.	Compute the conductivity when the current density is 12 units and the electric field is 20 units. Also identify the nature of the material. a) 1.67, dielectric b) 1.67, conductor **c) 0.6, dielectric** d) 0.6, conductor	L2
31.	Find the electron density when convection current density is 120 units and the velocity is 5m/s. a) 12 b) 600 **c) 24** d) 720	L3