FBQ1: What is electric dipole moment per unit volume?
Answer: Polarization

FBQ2: What type of capacitor is used in low loss precision circuit where miniaturisation is important?
Answer: Ceramic

FBQ3: In paramagnetic and diamagnetic materials the magnetisation is maintained by the___.
Answer: Field

FBQ4: The maximum safe voltage is for a capacitor is called the _____ voltage.
Answer: working

FBQ5: The work done per unit charge is called its _____.
Answer: potential

FBQ6: _____ is the property of an electron that makes it behave as if it were rotating around an axis of its own
Answer: Spin

FBQ7: Diamagnetism involves a change in the _____ of the magnetic moment of an atom.
Answer: Magnitude

FBQ8: Paramagnetism involves a change in the _____ of the magnetic moment of an atom.
Answer: Orientation

FBQ9: Paramagnetism is exhibited by those atoms or molecules in which the _____ magnetic moment is not cancelled.
Answer: Spin

FBQ10: _____ is the magnetic dipole moment per unit volume.
Answer: Magnetisation

FBQ11: _____ is the state of magnetic polarization of a material.
Answer: Magnetisation

FBQ12: What is the dimension of magnetic susceptibility χm of a material?
Answer: Dimensionless

FBQ13: The magnetic susceptibility χm for a diamagnetic material is _____?
Answer: Negative

FBQ14: The magnetic susceptibility χm for a paramagnetic material is _____?
Answer: Positive

FBQ15: Free currents in a _____ material are caused by external current sources.
Answer: Magnetized

FBQ16: Magnetic susceptibility is negative for _____ substances.
Answer: Diamagnetic

FBQ17: The relative permeability Km for a ferromagnetic material is _____ than unity.
Answer: Greater

FBQ18: The relative permeability Km for a diamagnetic material is _____ than unity.
Answer: Less

FBQ19: An atom which loses an electron becomes _____?

Answer: A cation

FBQ20: An atom which gains an electron becomes _____?
Answer: An anion

FBQ21: Substances from which electromagnets are made have _____ remanence.
Answer: large

FBQ22: Molecules that acquire a dipole moment only in the presence of an electric field are _____.
Answer: Non- polar

FBQ23: Molecules whose centre of positive charges coincides with the centre of negative charges are _____?
Answer: Polar

FBQ24: Molecules that possess a permanent dipole moment irrespective of the presence of an electric field are _____?
Answer: Polar

FBQ25: _____ is the electric dipole moment per unit volume of a dielectric.
Answer: Polarisation

FBQ26: Two plates of a parallel plate capacitor are 8.85 mm apart and 2.00 m2 in area. Compute the capacitance of the parallel plate capacitor. (Take εo = 8.85 x 10-12 F/m).
Answer: 2 x 10-9 F

FBQ27: What is the charge on a parallel plate capacitor with capacitance of 3.54 μF when a potential difference of 10,000 V is applied across it?
Answer: 0.0354 C

FBQ28: _____ is the SI unit of capacitance?
Answer: Farad

FBQ29: 1 Farad is _____?
Answer: Coulomb / Volt

FBQ30: The capacitance of a parallel plate capacitor _____ with constant cross sectional area A when the space or separation d between them is reduced (provided that the dielectric material between the plates remains unchanged)?
Answer: increases

FBQ31: What happens to the capacitance of a parallel plate capacitor if we increase the distance of separation between the parallel plates of a capacitor by two?
Answer: The capacitance reduces by a factor of 2

FBQ32: The introduction of a dielectric material between the plates of a parallel plate capacitor _____ the capacitance?
Answer: increases

FBQ33: Materials which respond very strongly to the presence of magnetic fields are called___ materials
Answer: Ferromagnetic

FBQ34: Inside a dielectric, the average electric field is --------than the electric field causing polarisation.
Answer: less

FBQ35: The magnetic dipole moment per unit volume is called_____.
Answer: Magnetisation

MCQ1: Magnetic field intensity H is measured in _____.

Answer: Amperes per metre

MCQ2: The reorientation of a polar material is not perfect due to_____.
Answer: Thermal agitation.

MCQ3: In a dielectric material, the extent of the charge separation depends on the magnitude of the ___.
Answer: Local field

MCQ4: The presence of dielectric led to the modification of _____law.
Answer: Gauss'

MCQ5: Two capacitors connected in parallel have_____.
Answer: Equal potential difference

MCQ6: _____ is a conductor wound in the form of a coil, with iron core.
Answer: Solenoid

MCQ7: The magnitude of the force F between two charges q1 and q2 kept at a distance r in a dielectric medium of permittivity ε is given by:
Answer: |F| = q1q2/4πεr2

MCQ8: A parallel plate capacitor has a capacitance of 1.0 F and the plates are 1.0 mm apart. What is the area of the plates? (Take εo = 8.85 x 10-12 F/m)
Answer: 1.13 x 108 m2

MCQ9: Two plates of a parallel plate capacitor are 8.85 mm apart and 2.00 m2 in area. Compute the capacitance of the parallel plate capacitor. (Take εo = 8.85 x 10-12 F/m).
Answer: 2 x 10-9 F

MCQ10: Ferromagnetic materials are used in the cores of transformers that have --------- hysteresis loop.
Answer: Very wide

MCQ11: The line integral of E around any closed path equals the rate of change of the magnetic flux φ through the surface enclosed by the path is ----------law
Answer: Faraday's

MCQ12: What is the effective capacitance of a parallel arrangement of 4 μF and 4 μF capacitors?
Answer: 2 μF

MCQ13: Two point charges q1 =10nC and q2 = -60nC are separated by a distance r = 6cm. What is the magnitude of the electric force that q1 exerts on q2?
Answer: 1.5 x 10-5N

MCQ14: Conducting materials contain _____ which are free to move about.
Answer: Electrons

MCQ15: A parallel – plate capacitor has circular plates of radius 8.2 cm, and 1.3 mm separation. What is its capacitance?
Answer: 1.4 x 10-10 F

MCQ16: The energy stored in a capacitor of capacitance 10 μF is 5 J. What is the voltage applied across its terminals.
Answer: 1,000 V

MCQ17: What is the dipole moment of a dipole comprising two charges q1 = +8.0nC and q2 = -8.0nC with 100 mm separation?
Answer: 8.0 x 10-10 Cm

MCQ18: How much charge is in a 1F capacitor which has a potential difference of

110V?
Answer: 110 C

MCQ19: Three capacitors of equal capacitance C are connected in series. What is the effective capacitance of the circuit? (Take εo = 8.85 x 10-12 F/m)
Answer: C/3

MCQ20: Calculate the capacitance of a parallel plate capacitor made with two square metal sheets of sides 1.3m, separated by a distance of 0.1m
Answer: 1.5 x 10-10 F

MCQ21: If an atom loses an electron, it becomes which of the following?
Answer: A cation

MCQ22: If an atom gains an electron, it becomes which of the following?
Answer: An anion

MCQ23: The plates of a parallel plate capacitor are separated by a distance. If a dielectric slab is inserted between the plates, the energy stored is _____?
Answer: Decreased

MCQ24: The unit for the energy stored per unit volume in a dielectric medium is _____?
Answer: J/m3

MCQ25: Which of these is true of a local field?
Answer: The local field Eloc is directly proportional to the induced dipole moment p.

MCQ26: Which of these is true of paramagnetic materials?
Answer: They get displaced in the direction of increasing field.

MCQ27: Which of these is true of diamagnetic materials?
Answer: They get attracted in the direction of the decreasing field.

MCQ28: The ratio of the magnetic moment and the angular momentum is called _____?
Answer: Gyro-magnetic ratio

MCQ29: Diamagnetism involves a change in the _____ of the magnetic moment of an atom.
Answer: Magnitude

MCQ30: Paramagnetism involves a change in the _____ of the magnetic moment of an atom.
Answer: Orientation

MCQ31: _____ is the magnetic dipole moment per unit volume.
Answer: Magnetisation

MCQ32: Calculate the energy stored in the magnetic field of a 3H inductor which carries a current of 2A.
Answer: 6J

MCQ33: A parallel plate capacitor has a capacitance of 2.8 nF when no dielectric material is present in the separation between the plates. If a material of dielectric constant K = 3.4 is now introduced and the capacitor is charged to a voltage of 100V, calculate the energy stored in the capacitor
Answer: 4.8 x 10-5 J

MCQ34: Magnetic fields are due to____ charges in motion.
Answer: Electric

MCQ35: An example of a diamagnetic material is _____.

Answer: Bismuth