Questions	Unofficial Answers
Q1. Which one of the following change cannot exist on a body?	c) 3.5e
Q2. The equipotential surfaces of an isolated point change are: a) Coaxial cylindrical surfaces b) Plane surfaces parallel to each other c) Concentric spherical surfaces centred at the charge d) Spherical surfaces but not centered at the charge	c) Concentric spherical surfaces centred at the charge
Q3. Consider the following statements about a balanced Wheatstone's bridge: Statement I: The current through the galvanometer is zero. Statement II: If the positions of battery and galvanometer are interchanged in the circuit, the current in the galvanometer will be zero. a) Only statement I is true b) Only statement II is true c) Both the statements are wrong d) Both the statements are true	(d) Both statements are true
Q4. The path traced by a charged particle moving perpendicular to a uniform magnetic field is a) Circle b) Straight line c) Helix d) ellipse	a) Circle
Q5. A magnetic dipole of magnetic moment m is placed in magnetic field B such that the angle between m and B is θ, magnetic dipole is in stable equilibrium position, then: a) θ = 0° **b)** θ = 90° **c)** θ = 180° **d)** θ = 45°	θ = 0°
The working principle of an A.C. generator is:	d) electromagnetic induction

a) Mutual induction b) Eddy currents c) Self induction d) electromagnetic induction	
Q7. Power factor of a series LCR circuit is maximum when:	XL = XC
Q8. Displacement current is produced due to: a) Constant electric field b) Constant magnetic field c) Changing electric field d) Changing magnetic field	d) Changing magnetic field
Q9. For total internal reflection of light; a) Light should be traveling from rarer medium to denser medium b) Light should be traveling from denser medium to rarer medium c) Light should be incident along the normal d) Angle of incidence should be equal to 90 degrees.	b) Light should be traveling from denser medium to rarer medium
Q10. The angle of minimum deviation of a prism depends on (i) refractive index of the material of prism (ii) refractive index of surrounding medium (iii) refractive angle of the prism a) Only option (i) b) Only option (ii) c) Only option (iii) d) All (i), (ii), and (iii)	d) All (i), (ii), and (iii)
Q12. An a - particle, a portion, an electron and a neutron are moving with the same velocity, Then the particle having longest de Broglie wavelength is a) Proton b) Electron c) Neutron d) a-particle	Electron

Q13. Let K be the kinetic energy, U be the potential energy and E be the total energy of an electron revolving around the nucleus in a hydrogen atom, then which of the following is correct? a) K>0, U>0, E>0 b) K>0, U<0, E<0 c) K>0, U>0, E<0 d) K<0, U<0, E<0	K>0, U<0, E<0
Q14. An example for isobars is	3/1 H and 3/2 He
Q15. Which of the following pairs are elemental semiconductors? a) Silicon and aluminum b) Silicon and germanium c) Germanium and cadmium d) Aluminium and cadmium	b) Silicon and germanium
II. Fill in the blanks by choosing appropriate answer from the given options for all the following questions: 16. According to Gauss's law in magnetism, magnetic _____ are not known to exist. 17. Lenz's law gives the _____ of induced emf. 18. For a step-down transformer, the ratio of primary current to secondary current is ____.	16. Monopoles 17. Polarity 18. Less than unity 19. Diffraction 20. photons

19. The bending of light around the corners and entering into the geometric shadow region is called _____. 20. In interaction with matter, light behaves as if it is made up of packets of energy called ____.	
Q26. Name the magnetic waves used in: i) the radar systems of aircraft ii) the laser assisted eye surgery (LASIK)	i) Microwaves ii) UV rays
Q34. A refracting telescope has an objective lens of focal length 144 cm and the length of tube is 150 cm. Calculate the magnification due to the telescope.	24
Q45. A beam of light consisting of two wavelengths 500 nm and 600nm is used to obtain interference fringes in Young's double slit experiment. Distance between the slits is 1mm and the screen is placed at a distance of 1.2m from the slits. i) Find the least distance between the central maximum and the point where the bright fringes due to both the wavelengths coincide. ii) Find the distance of the third dark fringe from the central bright fringe for the first wavelength.	i) 3.6mm ii) 1.5 mm