GUESS PAPERS

Q1 MODEL PAPER-1

Time : 3 Hours | SR.PHYSICS | Max.Marks : 60

SECTION-A

I. Answer ALL the following VSAQ: $10 \times 2 = 20$

		Ans-Page Index
1.	What is hypermetropia? How can it be corrected ?	[☛P 45(51)]
2.	How do you convert a moving coil galvanometer into an ammeter?	[☛P 47(56)]
3.	Define magnetic inclination or angle of dip.	[☛P 48(64)]
4.	Define Magnetic susceptibility. Mention its unit.	[☛P 48(66)]
5.	What is the phenomenon involved in the working of a transformer?	[☛P 49(72)]
6.	What are applications of microwaves?	[☛P 50(81)]
7.	What are cathode rays ?	[☛P 51(85)]
8.	What is work function ?	[☛P 51(87)]
9.	What is a p-type semiconductor ? What are the majority and minority charge carriers in it ?	[☛P 52(95)]
10.	Mention the basic methods of modulation.	[☛P 53(100)]

SECTION-B

II. Answer any SIX of the following SAQs: $6 \times 4 = 24$

11.	With a neat labelled diagram explain the formation of image in a simple microscope.	[☛P 26(13)]
12.	How do you determine the resolving power of your eye ?	[☛P 28(18)]
13.	Derive an expression for the intensity of the electric field at a point on the axial plane of an electric dipole.	[☛P 31(25)]
14.	Derive the formula for equivalent capacitence when the capacitors are in series.	[☛P 34(28)]
15.	State & explain Biot-Savart law.	[☛P 36(32)]
16.	Describe the ways in which Eddy currents are used to advantage.	[☛P 38(36)]
17.	Explain the different types of spectral series of Hydrogen atom.	[☛P 40(41)]
18.	Describe how a semiconductor diode is used as a half wave rectifier.	[☛P 41(43)]

SECTION-C

III. Answer any TWO of the following LAQs: $2 \times 8 = 16$

19.	(a) Explain the formation of stationary waves in an air column enclosed in open pipe. Derive the equations for the frequencies of the harmonics produced.	[☛P 13(1)]
	(b) A open organ pipe 85cm long is sounded. If the velocity of sound is 340m/s, what is the fundamental frequency of vibration of the air column?	[☛P 13(TP)]
20.	State Kirchoff's law for an electrical network. Using these laws deduce the condition for balance in a Wheatstone bridge.	[☛P 19(6)]
21.	Explain the principle and working of a nuclear reactor with the help of a labelled diagram.	[☛P 22(9)]

GUESS PAPERS

Q 2 MODEL PAPER-2

Time : 3 Hours

SR.PHYSICS

Max.Marks : 60

SECTION-A

I. Answer ALL the following VSAQ: $10 \times 2 = 20$

Ans-Page Index

1. Define 'power' of a convex lens. What is its unit ? [☞P 45(53)]
2. What is the importance of Oersted's experiment ? [☞P 47(60)]
3. Define magnetic declination. [☞P 48(65)]
4. Magnetic lines form continuous closed loops. Why ? [☞P 48(68)]
5. A transformer converts 200 V AC into 2000 V AC. Calculate the number of turns in the secondary if the primary has 10 turns. [☞P 49(75)]
6. Give two uses of infrared rays. [☞P 50(79)]
7. What is photoelectric effect ? [☞P 51(88)]
8. Write down Einstein's photoelectric equation. [☞P 51(90)]
9. Which gates are called universal gates? [☞P 52(98)]
10. Define modulation. Why is it necessary? [☞P 53(99)]

SECTION-B

II. Answer any SIX of the following SAQs: $6 \times 4 = 24$

11. Define critical angle. Explain total internal reflection using a neat diagram. [☞P 25(11)]
12. Derive the expression for the intensity at a point where interference of light occurs. Arrive at the conditions for maximum and zero intensity. [☞P 29(19)]
13. Derive the equation for the couple acting on an electric dipole in a uniform electric field. [☞P 30(23)]
14. Derive an expression for the capacitance of a parallel plate capacitor. [☞P 33(27)]
15. Derive an expression for the magnetic dipole moment of a revolving electron. [☞P 37(35)]
16. Obtain an expression for the emf induced across a conductor which is moved in a uniform magnetic field which is perpendicular to the plane of motion. [☞P 38(37)]
17. What are the limitations of Bohr's theory of hydrogen atom ? [☞P 40(40)]
18. What is rectification ? Explain the working of a full wave rectifier. [☞P 41(42)]

SECTION-C

III. Answer any TWO of the following LAQs: $2 \times 8 = 16$

19. (a)How are stationary waves formed in closed pipes ? Explain the various modes of of vibration and obtain relations for their frequencies. [☞P 14(2)]
    (b)A closed organ pipe 70cm long is sounded. If the velocity of sound is 331m/s, what is the fundamental frequency of vibration of the air column? [☞P 14(TP)]
20. State the working principle of potentiometer. Explain with the help of circuit diagram how the potentiometer is used to determine the internal resistance of the given primary cell. [☞P 21(8)]
21. What is radioactivity ? State the law of radioactive decay. Show that radioactive decay is exponential in nature. [☞P 23(10)]

GUESS PAPERS

Q3 MODEL PAPER-3

Time : 3 Hours

SR.PHYSICS

Max.Marks : 60

SECTION-A

I. Answer ALL the following VSAQ: $10 \times 2 = 20$

		Ans-Page Index
1.	What is myopia ? How can it be corrected ?	[☞P 45(50)]
2.	Distinguish between ammeter and voltmeter.	[☞P 46(55)]
3.	What is the magnetic moment associated with a solenoid ?	[☞P 48(69)]
4.	Classify the following materials with regard to magnetism. Manganese, Cobalt, Nickel, Bismuth, Oxygen, Copper	[☞P 48(70)]
5.	What is the phase difference between AC emf and AC current in the following : Pure resistor, pure inductor and pure capacitor	[☞P 49(77)]
6.	If the wavelength of electromagnetic radiation is doubled, what happens to the energy of photon ?	[☞P 50(83)]
7.	Write down deBroglie's relation and explain the terms therein.	[☞P 51(91)]
8.	State Heisenberg's Uncertainty Principle.	[☞P 51(92)]
9.	Draw the circuit symbols for p-n-p and n-p-n transistors.	[☞P 52(96)]
10.	What is sky wave propagation ?	[☞P 53(104)]

SECTION-B

II. Answer any SIX of the following SAQs: $6 \times 4 = 24$

11.	Why does the setting sun appear red ?	[☞P 26(14)]
12.	Explain Doppler effect in light. Distinguish between red shift and blue shift.	[☞P 28(17)]
13.	Define intensity of electric field at a point. Derive an expression for the intensity due to a point charge.	[☞P 31(24)]
14.	Derive the formula for equivalent capacitence when the capacitors are in parallel.	[☞P 34(29)]
15.	State and explain Ampere's law.	[☞P 36(33)]
16.	Obtain an expression for the mutual inductance of two long coaxial solenoids.	[☞P 39(39)]
17.	Describe Rutherford atom model. What are the draw backs of this model ?	[☞P 61(142)]
18.	Define NAND and NOR gates. Give their truth tables.	[☞P 43(46)]

SECTION-C

III. Answer any TWO of the following LAQs: $2 \times 8 = 16$

19.	Explain the formation of stationary waves in stretched strings and hence deduce the laws of transverse waves in stretched strings.	[☞P 15(3)]
20.	State the working principle of potentiometer. Explain with the help of circuit diagram how the emf of two primary cells are compared by using the potentiometer.	[☞P 20(7)]
21.	Explain the principle and working of a nuclear reactor with the help of a labelled diagram.	[☞P 22(9)]

GUESS PAPERS

MODEL PAPER-4

SR.PHYSICS

Time : 3 Hours | Max.Marks : 60

SECTION-A

I. Answer ALL the following VSAQ: $10 \times 2 = 20$

Ans-Page Index

1. Define focal length and radius of curvature of a concave lens. [☞P 45(54)]
2. How do you convert a moving coil galvanometer into a voltmeter ? [☞P 46(57)]
3. What are the S.I units of magnetic moment, magnetic induction and magnetic field ? [☞P 48(71)]
4. What is the magnetic moment associated with a solenoid ? [☞P 48(67)]
5. What is transformer ratio ? [☞P 49(74)]
6. Microwaves are used in Radars. Why? [☞P 50(80)]
7. Give examples of photosensitive substances. Why are they called so? [☞P 51(89)]
8. Write down deBroglie's relation and explain the terms therein. [☞P 51(91)]
9. In which bias can a Zener diode be used as voltage regulator ? [☞P 52(97)]
10. Which type of communication is employed in Mobile Phones ? [☞P 53(102)]

SECTION-B

II. Answer any SIX of the following SAQs: $6 \times 4 = 24$

11. Explain the formation of a rainbow [☞P 2715)]
12. Does the principle of conservation of energy hold for interference and diffraction phenomena? Explain briefly. [☞P 29(20)]
13. State and explain Coulomb's law in electricity. [☞P 30(21)]
14. Derive an expression for the electric potential due to a point charge. [☞P 35(30)]
15. Find the magnetic induction due to a long current carrying conductor. [☞P 37(34)]
16. Obtain an expression for the magnetic energy stored in a solenoid in terms of the magnetic field, area and length of the solenoid. [☞P 39(38)]
17. Write a short note on deBroglie's explanation of Bohr's second postulate of quantization. [☞P 61(141)]
18. Distinguish between Half wave rectifier and full wave rectifier [☞P 42(44)]

SECTION-C

III. Answer any TWO of the following LAQs: $2 \times 8 = 16$

19. What is Doppler effect ? Obtain an expression for the apparent frequency of sound heard when the source is in motion with respect to an observer at rest. [☞P 17(4)]
20. State Kirchoff's law for an electrical network. Using these laws deduce the condition for balance in a Wheatstone bridge. [☞P 19(6)]
21. Explain the principle and working of a nuclear reactor with the help of a labelled diagram. [☞P 22(9)]