New SLOs based Guess Paper for SSC Annual-II Examination 2023

As per a by the Controller of Examinations Khyber Pakhtwonwa, the forthcoming SSC Annual-II (10th Class) Exam 2023 will be based on these SLOs-based papers.

PHYSICS

UNIT NO. 10 SIMPLE HARMONIC MOTION AND WAVE.

KNOWLEDGE BASED. 30%

1. Prove the relation between wave speed, wave length and frequency of wave.
2. Suppose you stand on a swing instead of sitting on it. Will your frequency of Oscillation increase or decrease?
3. What is meant by spring constant? Write its formula.
4. What is the difference between Longitudinal and transverse waves?
5. Write two necessary conditions for a body to execute simple harmonic motion.
6. Hooke's law. Write its mathematical form.

APPLICATION BASED QUESTIONS. 20%

1. What is the frequency of oscillation if the time period is 20 ms?
2. A spring has a spring constant 48.0 N/m. This spring is pulled to a distance of 55 cm from equilibrium. What is the restoring force?

LONG QUESTIONS.

1. What is Simple Harmonic Motion? What are the conditions for an object to oscillate with SHM?
2. What is a wave motion? How waves can be categorized?
3. Using ripple tank explain reflection, refraction and diffraction of wave.

NUMERICAL QUESTIONS. 1, 4, 6

UNIT NO. 11 SOUND

UNDERSTANDING BASED QUESTIONS 50%

1. Why sound produced by a simple pendulum is not heard?
2. Why is the intensity of an echo less than that of the original sound?
3. In which medium air or water, an echo is heard sooner? Why?
4. Why sound cannot be heard on the moon?
5. Why does your voice sound fuller in the shower?
6. Why is it so quiet after a snow fall?

APPLICATION BASED QUESTIONS. 20%

1. Suppose that when a certain sound intensity level triples, the sound intensity (in W/m2) also triples. Determine the sound intensity level.
2. What is the wavelength of the sound in dry air if its frequency is 590 Hz on a hot day with temperature of 40 ^{o}C?

LONG QUESTIONS.

1. Define pitch and quality of sound. Explain echo one with examples.
2. What is the speed of sound?
3. How sound is reflected? Describe the difference between echo and reverberation.
4. What is noise? Explain why noise is nuisance?

NUMERICAL QUESTIONS. 2, 3, 7

UNIT NO. 12 GEOMETRICAL OPTICS

KNOWLEDGE BASED QUESTIONS. 30%

1. Differentiate between regular and irregular reflection.
2. Differentiate between concave and convex mirror.
3. Define Critical angle. Write its mathematical form.
4. What is optical fibres?
5. What is difference between near sightedness and far sightedness?
6. Define Snell's law. Write its formula.
7. Describe the law of light reflection.
8. Write down two uses of lens

UNDERSTANDING BASED QUESTIONS. 50%

1. Which type of lens would you use to start fire from light from sun concave or convex, would work best? At what distance from the lens should the paper be held for best results?
2. If a concave mirror produces a real image, is the image necessarily inverted? Explain
3. Can we achieve total internal reflection from optically rare medium to optically dense medium?
4. How near sightedness can be corrected?

APPLICATION BASED QUESTIONS.20%

1. If the object height is 2 cm, what is the image height tin each case.
2. What is the magnification?
3. What is speed of light in water having index of refraction as 1.33?

LONG QUESTIONS.

1. Derive thin lens equation.
2. Derive spherical mirror formula.
3. What is meant by the terms near sightedness and far sightedness? How can these defects be corrected?
4. What is optical fibre? Write down its uses.

NUMERICAL QUESTIONS: 2, 3 5, 6, 8

UNIT NO. 13 ELECTROSTATICS

KNOWLEDGE BASED QUESTIONS. 30%

1. What is meant by electrostatic induction?
2. State Coulomb's law and write its equation.
3. What is meant by electric field intensity? Write its SI unit.
4. Differentiate between variable and fixed capacitor.
5. Write two hazards of static electricity.
6. Define electric field and write it SI unit.

UNDERSTANDING BASED QUESTIONS. 50%

1. How does shuffling feet across a carpet cause hair to stand on our body?
2. Why are lighting roads normally a higher elevation than the buildings they protect?
3. If you wish to store a large amount of energy in a capacitor bank, would you connect capacitors in series or parallel? Explain.
4. Why the pieces of paper initially attracted by charged comb fly away when they touch it?

LONG QUESTIONS.

1. State and explain Coulomb's law.
2. What is electrostatic induction? Explain.
3. Derive the formula for the equivalent capacitance for a series combination of a number of capacitors.
4. What are hazards of static electricity? Explain.
5. What is a capacitor? Describe the characteristics features of series combination of capacitors.

NUMERICAL QUESTIONS: 3, 4, 5, 7

UNIT NO. 14 CURRENT ELECTRICITY

KNOWLEDGE BASED QUESTIONS. 30%

1. Define potential difference and write its SI unit.
2. State Ohm's law and write its equation.
3. Difference between ohmic and non-ohmic conductors.
4. State Joule's law and write its equation.
5. Difference between conductor and insulator.
6. Define Kilowat-hour.
7. What is difference between fuse and circuit?

UNDERSTANDING BASED QUESTIONS. 50%

1. A number of light bulbs are connected to single power outlet. Will they provide more illumination when connected in series or in parallel? Why?
2. Explain why is it possible for birds to perch safely on high tension wires without being electrocuted?
3. How do jewelers identify a diamond to be real or fake?
4. What is meant by e.m.f? Write its unit.
5. What is electric power? Write its unit.

LONG QUESTIONS.

1. State Ohm's law of current electricity? What are its limitations?
2. State Joule's law also derive the equation.
3. Determine the equivalent resistance of series combination of resistors.
4. Describe four safety measures that should be taken in connection with the household circuit.

NUMERICAL QUESTIONS: 1, 2, 3, 6 , 7

UNIT NO. 15 ELECTROMAGNETISM

KNOWLEDGE BASED QUESTIONS. 30%

1. Define right hand rule.
2. What is meant by armature?
3. State Lenz's law.
4. Difference between step-up and step –down transformer.
5. What is meant by mutual induction?
6. On what principle does DC motor work?

UNDERSTANDING BASED QUESTIONS. 50%

1. Differentiate between electric and magnetic fields.
2. Can an electron at rest be set into motion with a magnetic field?
3. Why does a compass needle points north?
4. How can a magnetic field be used to generate electric current.
5. What would happen if we use a slip ring to drive a DC motor?

APPLICATION BASED QUESTIONS. 20%

1. Where this magnetic levitation is is applied?
2. What is the turn's ratio of transformer in X-ray tube?

LONG QUESTIONS.

1. Explain Mutual Induction.
2. Explain the working of DC motor.
3. Sketch and describe the construction and working of AC generator.
4. Explain the force on a current carrying wire in a magnetic field.

NUMERICAL QUESTIONS: 3, 4, 5, 7

UNIT NO. 16 INTRODUCTORY ELECTRONICS.

KNOWLEDGE BASED QUESTIONS. 30%

1. Difference between AND gate and OR gate.
2. Write down the uses of Logic gate.
3. Name the parts of cathode ray oscilloscope.
4. Difference between analogue and digital electronics.
5. Draw the symbol diagram for AND gate and write its truth table.
6. What is meant by NAND gate? Write its truth table.
7. Why electron beam is also called as cathode rays?

UNDERSTANDING BASED QUESTIONS. 50%

1. What is the function of an accelerating anode in an electron gun?
2. Why image is distorted when a magnet is brought close to old television screens or monitors with cathode ray tube inside?
3. If there are 4 inputs in any logic gate, how many combinations are possible?
4. What conditions produce a high (1) output for an AND gate and NOR gate?
5. What are the Boolean equation to represent the output of NAND and NOR gates?

LONG QUESTIONS.

1. What are cathode rays? How are cathode rays produced?
2. Define logic gate. Describe the operation of AND, OR, NOT, NAND and NOR logic gates by drawing their symbols and truth tables.

UNIT NO. 17 INFORMATION AND COMMUNICATION TECHNOLOGY.

KNOWLEDGE BASED QUESTIONS. 30%

1. What is meant by telecommunication? Name its two sources.
2. What is computer? Describe its parts.
3. What are the important and main parts of a computer? Explain briefly
4. How can you use internet and email for social networking?

UNDERSTANDING BASED QUESTIONS. 50%

1. How information is difference from data?
2. How a flash drive is different from other storage devices.
3. Identify the most reliable means of storing information?
4. What does 'cell' in 'cell phone' refers to?

LONG QUESTIONS.

1. What is information and communication Technology? Explain briefly its components.
2. Describe function and use of fax machine, cell phone, photo phone and computer.
3. What are the functions of word processing?

UNIT NO. 18 RADIOACTIVITY

KNOWLEDGE BASED QUESTIONS. 30%

1. What do you know about half-life of radioactive elements?
2. How 52 U298 can be used for geological dating?
3. What are radioisotopes? Explain three uses for various applications.
4. What is gamma decay? Write its general equation.
5. Write two safety precautions that are taken against radiations.

UNDERSTANDING BASED QUESTIONS. 50%

1. The atomic number of one particular isotope is equal to its mass number which isotope is it?
2. It possible for a form of heavy hydrogen to decay by emitting an alpha article? Explain.
3. In nuclear radiation is harmful. How it can be used for treatment of debases?
4. Can carbon -14 dating give the age of fossil dinosaur skeletons? Explain.

LONG QUESTIONS.

1. Find the energy produced from 1 g of uranium.
2. How is carbon-14 used to determine the ages of wood, bones and other artifacts?
3. What are fission and fusion?
4. What are radioisotopes? Explain their uses of various applications?
5. What are radiation hazards? How can we safeguard ourselves from radiation?

NUMERICAL QUESTIONS: 4, 5, 6