

10th CLASS GUESS PAPER PHYSICS NEW SCHEME 2023 –

KNOWLEDGE BASE= 50 % UNDERSTANDING BASE= 35% APPLICATION BASE=15%

CHAPTER NO.10

SIMPLE HARMONIC MOTION AND WAVES.

MCO'S PTB:Page No:- 16- i, iv, v, vi, ix

Knowledge Base = 50%

- 1- What is meant by oscillation?
- 2- How does stiffness of the spring effect the value of k?
- 3- What is the function of restoring force during oscillatory motion?
- 4- Which type of forces are acting on a displaced pendulum.
- 5- When the ball is at the center of the bowl what will be the net force?
- 6- What is r the displacement of an object in a simple harmonic motion when kinetic and potential energy are equal?
- 7- How does the mechanical energy of system reduce?
- 8- How can we generate circular waves in a ripple tank?
- 9- How does ocean waves cause destruction?
- 10- Define longitudinal waves?

UNDERSTANDING

1. Tell whether or not these motions are examples of simple harmonic motion.
 - a) Up and down motion of leaf in water ponds
 - b) Motion of hands of a ceiling fan
 - c) Motion hands of clock
 - d) Motion of plucked string fixed at both it ends
 - e) Moment of honey bee.

CONCEPTUAL QUESTION

10.1,10.2,10,3

LONG QUESTIONS

1. Define Simple Harmonic Motion? Explain with an example.

Numerical Problem

10.1,10.2,10.4

CHAPTER NO. 11

SOUND

MCO'S: PTB-Page No.33- i, ii, iii, v, vi,

KNOWLEDGE BASE : 50%

1. What is Tuning fork?
2. Define Loudness of sound and what are the factors affecting it?
3. Define the quality of sound with an example.
4. State Web Fechner Law.
5. Define SI Unit of Sound.
6. Calculate the frequency of a Sound wave of speed 340 ms⁻¹ and wavelength 0.5 m
7. What is noise pollution? Explain its sources and effects. How it is reduce?
8. What is silent whistle and why it is called so?
9. What are ultrasonic and why they are used in our life.
10. How we can find the depth of ocean?
11. What is SONAR.
12. Define Pitch of sound. What is the relation between pitch and frequency of sound?
13. What is the audible frequency range for human ear?

CONCEPTUAL QUESTION

1. You can listen to your friend round but you cannot watch him Why?
2. Is there any difference between echo and reflection of sound? Explain
3. Why Ultrasound is useful in medical field
4. Why sound waves are called mechanical waves?
5. Why would happen to the loudness of sound with increase in its frequency?

LONG QUESTIOS:

1. Define Simple harmonic motion. Explain it as.
 - a. When mass attached to a spring
 - b. For ball and bowl system.
2. What are depend oscillations? How damping progressively reduces the amplitude of oscillation? Describe its one application
3. Distinguish between longitudinal and transverse waves with suitable examples.
4. Derive a relation between speed, frequency and wavelength of a wave. Write its formula relation speed of wave is its time, period of waves length
5. What is Ripple tank? Explain its construction and following properties of waves with the reference of ripple tank experiment.

NUMERICAL PROBLEM:

11.2, 11.4,11.5

CHAPTER NO. 12;

GEOMETRICAL OPTICS

MCO'S : PTB:Page No.:64- iv, v,- iii,v iii.

KNOWLEDGE BASE: 50%

1. Define regular reflection and irregular reflection?
2. What are the laws of reflection of light?
3. Write down uses of spherical mirrors?
4. Define mirror formula /mirror equation? Also write of on vacation.
5. Write down the law of refraction
6. What is Snell's law?
7. What is refractive index? Write down the methods to calculate the refractive index.
8. What is meant by critical angle?
9. What is meant by Angle of Deviation?
10. Define Power of lens and its unit.
11. Write two characteristic of focus of a concave and a convex mirror.
12. What is Telescope and types of telescope

COCEPTUAL QUESTIONS

1. Define the following terms used in refraction: Angle of incident ii- angle of refraction
2. When an optician's testing room is small, he uses a mirror to help him tst the eyesight of his patients . Explain why.
3. How does the thickness of lens affect its focal length
4. Under what conditions will a converging lens form virtual image?

NUMERICAL PROBLEM

12.3,12.8,12.9.

CHAPTER NO. 13-

ELECTROSTATICS

MCO'S: PTB: Page No. 86- v, vi, vii, x, xi

KNOWLEDGE BASE: 50%

- 1- Define Electric field intensity?
- 2- State the Coulomb's law.
- 3- What is meant by Electric Potential?
- 4- Define Fared?
- 5- What is meant by Capacitance?
- 6- Why it is very dangerous in swim in the open sea, play in an open field or hid under a tree during a thunderstorm?
- 7- Enlist few uses of capacitors.
- 8- Derive the formula for the equivalent capacitance for a series combination of a number of capacitors.
9. What are hazards of static electricity?
10. What is difference between variable and fixed types capacitors.

CONCEPTUAL QUESTIONS

13.1,13.3,13.6,13.7

NUMERICAL PROBLEM

13.10,13.7

CHAPTER NO. 14

CURRENT AND ELECTRICITY

KNOWLEDGE BASE 50%

MCO'S: PTB: Page No. 114: I,ii, iv, v,vi,viii

1. What is meant by conventional current?
2. How a galvanometer is converted into voltmeter?
3. How galvanometer is converted into ammeter.
4. State and explain Ohm's law. Write down its limitations.
5. Define resistance and its unit.
6. State Joule's Law.
7. Define kilowatt hour?
8. Differentiate between A.C and D.C
9. What are live and neutral wires?
10. Define fuse and write down its principle
11. What is Circuit Breaker? Also write down its principle.

UNDERSTANDING:

1. In Order to measure current through a resistance, ammeter is always connected in series with the resistance.
2. In order to measure potential difference across. A resistance, voltmeter is always connected in parallel with the resistance.

CONCEPTUAL QUESTIONS

1. What is the difference between electronic current and conventional current?
2. Why is conductor's charges transferred by free electron rather than by positive charge?
3. What is the difference between a cell and a battery?
4. How many watt-hours are there is 1000 Joules?
5. Which metal used as the filament of an electric bulb? Explain with reason.
6. Describe four safety measures that should be taken in connection with the household circuit.

LONG QUESTIONS:

1. State and explain Ohm's Law. What are its limitations?
2. Explain the V-I characteristics of Ohmic and non-Ohmic conductor.
3. What is the difference between the conductors and insulators?
4. State and explain Joule's law. Derive its formula.
5. What is the difference between DC and AC?

CHAPTER NO.15

ELECTROMAGNETISM

KNOWLEDGE BASE 50%

MCO'S: PTB: Page No. 136: v,vi,viii,

1. What is Right hand grip rule?
2. State Fleming's left hand Rule
3. What is D.C. Motor?
4. Describe working principle of D.C. Motor.
5. State Faraday Law of Electromagnetic induction.
6. Define Mutual Induction?
7. Define self-Induction
8. Define Transformer
9. Define Step down and Step up transformer.
10. Prove that Lenz Law is manifestation of the law of conservation of energy
11. What is Relay Circuit.

CONCEPTUAL QUESTIONS.

- 1- Which device is used for converting electrical energy into mechanical energy?
- 2- What is difference between a generator and a motor?
- 3- Can transfer operate on direct current?

LONG QUESTIONS:

1. What is transformer? Explain its construction and types.

NUMERIAL PROBLEM:

15.1,15.2

CHAPTER NO. 16 BASIC ELECTRONICS

MCO'S- PTB: Page No.152- ii,iv, vi, vii

KNOWLEDGE BASE

1. Define Electronics
2. What do you understand by thermionic emission?
3. When and who discovered electron?
4. What is Cathode Rays Oscilloscope?
5. Explain the difference between analogue and digital electronics
6. What is bit and byte?
7. Write the truth table of NAND gate.
8. NAND gate is the reciprocal of AND gate discuss?

CONCEPTUAL QUESTIONS

1. Name two factors which can enhance thermionic emission.
2. When electron pass through two parallel plates having opposite charge, they are deflected towards the positively charged plate. What important characteristics of the electron can be inferred from this?

LONG QUESTIONS:

1. Draw the circuit diagram of AND operation and OR operation and also write the truth table of Both these operations.

CHAPTER NO. 17 INFORMATION AND COMMUNICATION TECHNOLOGY.

MCO'S: PTB: Page No.-172- i, ii, iv, vi, vii

KNOWLEDGE BASE

1. What is difference between data and information?
2. Define the term: i) Information Technology ii) Telecommunication
3. What are the components of information technology?
4. What is difference between Hardware and software?
5. What is meant by Modulation?
6. What is meant by Optical Fiber?
7. Difference between Input and output Device?
8. Difference between Primary and Secondary memory?
9. What is Floppy Disk?
10. What is HTML?
11. Define word processing?

CONCEPTUAL QUESTIONS

1. Why optical fibre is more useful tool for the communication process?
2. What is the difference between RAM and ROM memories?
3. Which is more reliable floppy disk or a hard disk?

LONG QUESTIONS:

1. Explain in detail about compact disc and flash drive.
2. What is meant by OR gate? Write its symbol and truth table.

CHPATER NO. 18 **ATOMIC AND NUCLEAR PHYSICS.**

MCO'S-PTB- Page No. -ii, iii, v, vi, vii, ix

KNOWLEDGE BASE

1. What are Nucleons?
2. Difference between Atomic No and Atomic Mass No.
3. What are radioactive isotopes?
4. What is the use of α , β and γ radiations?
5. What do you know about half life?
6. What is meant by penetrating ability?
7. How can radioactive help in the treatment of Cancer?
8. What is a radioactive tracer? Describe one application each in medicine, agriculture and industry.
9. Write a note on Einstein's mass energy equation.
10. Define Fusion Reaction.
11. Discuss uses and the hazards of radiations.,
12. Write the difference between Fission reaction and Fusion reaction
13. What is meant by half-life radioactive element?

CONCEPTUAL QUESTIONS

1. What is the difference between natural and artificial radioactivity?
2. Which has more penetrating power, an alpha particle or a gamma ray photon?

LONG QUESTION

1. Define Natural radioactivity. Also write any three characteristics of Alpha Particles.

NUMERICAL PROBLEM

18,2,18.3,18.5,18.9