

# Applied Physics

**Subject Code: BE03**

**Date: 2025-03-08**

**Subject Name: Applied Physics**

**Time Duration: -**

**Total Marks: 100**

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## Instructions:

1. Stable Internet Required: Ensure a good connection.
  2. Use Allowed Devices: Only a laptop/PC; no mobile phones or smartwatches.
  3. No Switching Tabs: Changing windows may lead to disqualification.
  4. Answer all questions within the given time limit. No extra time will be provided.
  5. Submit the exam before the deadline, as responses will not be accepted afterward.
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**A person travels to the west and then 3m to the north find displacement.**

**Marks: 2**

- ☐ 7m
- ☐ 5m
- ☐ 1m
- ☐ 3.5m

**Newton's First Law of motion gives definition of \_\_\_\_\_**

**Marks: 2**

- ☐ mass
- ☐ velocity
- ☐ force
- ☐ time

**Momentum of an object is zero when object is**

**Marks: 2**

- ☐ having mass
- ☐ in rest
- ☐ very large mass
- ☐ having constant acceleration



**Direction of friction force is in \_\_\_\_ direction of motion of body**

**Marks: 2**

- ☐ same
- ☐ opposite
- ☐ perpendicular
- ☐ none

**Velocity of an object changes from 10m/s to 50m/s in 2 second. What will be acceleration**

**Marks: 2**

- ☐  $20\text{m/s}^2$
- ☐  $20\text{m/s}$
- ☐  $30\text{m/s}^2$
- ☐  $40\text{m/s}$

**If applied voltage is 230V and current passing from conductor is 0.8A. Power is \_\_\_\_ Watt**

**Marks: 2**

- ☐ 287.5
- ☐ 184
- ☐ 223.8
- ☐ 229.2



**External force acting on a body is zero when acceleration is \_\_\_\_**

**Marks: 2**

- ☐ changes
- ☐ zero
- ☐ remain constant
- ☐ none

**CGS unit of Impulse of force is**

**Marks: 2**

- ☐ N.s
- ☐ dyne.s
- ☐ a and b
- ☐ joule

**kg.m/s is SI unit of**

**Marks: 2**

- ☐ Impulse of force
- ☐ Linear momentum
- ☐ a and b
- ☐ N

**Linear momentum is \_\_\_\_**

**Marks: 2**



**Newton's First Law is Law of**

**Marks: 2**

- ☐ Force
- ☐ Inertia
- ☐ a and b
- ☐ None

**Which of the following factors does kinetic energy depends on ?**

**Marks: 2**

- ☐ mass only
- ☐ velocity only
- ☐ both a and b
- ☐ none

**When gravitational potential energy converted into kinetic energy the velocity will be given by**

**Marks: 2**

- ☐  $v = \sqrt{2gh}$
- ☐  $v^2 = u^2 + 2ah$
- ☐ both a and b
- ☐ none

**What is the SI unit of kinetic Energy ?**

**Marks: 2**

- ☐ Newton (N)
- ☐ Joule (J)
- ☐ Watt (W)
- ☐ Pascal (Pa)



If  $v = n \lambda$  then  $n =$  \_\_\_\_\_

Marks: 2

- ☐ Amplitude
- ☐ Frequency
- ☐ Phase
- ☐ Periodic time

Capacity to collect light by optical fibre is called

Marks: 2

- ☐ Acceptance Angle
- ☐ Numerical Aperture
- ☐ Total Internal Reflection
- ☐  $\mu$

The phenomena called 'mirage' is possible due to \_\_\_\_ property of light.

Marks: 2

- ☐ absorption
- ☐ reflection
- ☐ total internal reflection
- ☐ refraction

Light waves are \_\_\_\_\_

Marks: 2

- ☐ longitudinal
- ☐ transverse
- ☐ stationary
- ☐ none



The frequency of a wave is 100Hz, So periodic time is

Marks: 2

- ☐ 100 sec
- ☐ 1 sec
- ☐ 10 sec
- ☐ 0.01 sec

If frequency of sound is 512 Hz and  $v = 330\text{m/s}$  then  $\lambda = \_\_\text{m}$

Marks: 2

- ☐ 0.6445
- ☐ 0.8454
- ☐ 0.6045
- ☐ 0.9353

Wavelength of the ultrasonic wave is \_\_\_\_\_ the normal sound waves

Marks: 2

- ☐ more
- ☐ less
- ☐ equal
- ☐ none

Sound wave in air is \_\_\_\_\_

Marks: 2

- ☐ lognitudnal
- ☐ standing
- ☐ transverse
- ☐ circular



**Ultrasonic waves are \_\_\_\_ for humans.**

**Marks: 2**

- ☐ Audible
- ☐ inaudible
- ☐ visible
- ☐ permeable

**With decrease in temperature the sound wave speed \_\_\_\_\_**

**Marks: 2**

- ☐ increase
- ☐ decrease
- ☐ constant
- ☐ none

**Mechanical waves require \_\_\_\_ medium**

**Marks: 2**

- ☐ inelastic
- ☐ elastic
- ☐ Fluid or solid
- ☐ air or vacuum

**\_\_\_\_\_ circuit used in magnetostriction**

**Marks: 2**

- ☐ AC Tank
- ☐ DC Tank
- ☐ LC Tank
- ☐ FC Tank



**Velocity of light in the medium \_\_\_\_\_ with increase its refractive index**

**Marks: 2**

- ☐ decreases
- ☐ increases
- ☐ zero
- ☐ constant

**At what angle of incidence, light ray will not refract**

**Marks: 2**

- ☐  $0^\circ$
- ☐  $90^\circ$
- ☐  $< \theta_c$
- ☐  $180^\circ$

**Refractive index represented by**

**Marks: 2**

- ☐ Eta
- ☐  $\mu$
- ☐ both a and b
- ☐ none

**Absolute  $\mu$  for glass and diamond are**

**Marks: 2**

- ☐ 0.52 and 1.42
- ☐ 1.42 and 2.42
- ☐ -1.5 and -2.4
- ☐ 1.52 and 2.42





**Laser is \_\_\_\_ radiation**

**Marks: 2**

- ☐ monochromatic
- ☐ polychromatic
- ☐ white light
- ☐ none

**Directional property of Laser used in \_\_\_\_**

**Marks: 2**

- ☐ surveying
- ☐ remote sensing
- ☐ Lidar
- ☐ All of Above

**Source in fibre optic is \_\_\_\_ and receiver is \_\_\_\_**

**Marks: 2**

- ☐ Laser and LED
- ☐ LED and Laser
- ☐ LED and photodiode
- ☐ Photodiode and Laser

**Avg lifespan of fibre is \_\_\_\_**

**Marks: 2**

- ☐ 10 yrs
- ☐ 20 yrs
- ☐ 50 yrs
- ☐ 40 yrs



**Skew rays travels in \_\_\_\_**

**Marks: 2**

- ☐ SM step
- ☐ SM graded
- ☐ MM graded
- ☐ All

**Optical fibre is made of \_\_\_\_ material**

**Marks: 2**

- ☐ semi-conductor
- ☐ metallic
- ☐ conductor
- ☐ none

**LASER is \_\_\_\_ emission**

**Marks: 2**

- ☐ Stimulated
- ☐ Spontaneous
- ☐ Absorption
- ☐ None

**Sound wave frequency less than 20Hz is \_\_\_\_**

**Marks: 2**

- ☐ Audible
- ☐ supersonic
- ☐ infrasonic
- ☐ ultrasonic



**Standing wave is also \_\_\_\_**

**Marks: 2**

- ☐ Progressive
- ☐ Stationary
- ☐ Longitudnal
- ☐ none

**Which one is mechanical wave ?**

**Marks: 2**

- ☐ light
- ☐ x-ray
- ☐ radio
- ☐ sound

**Luminous will be considered as \_\_\_\_**

**Marks: 2**

- ☐ Intensity
- ☐ Brightness
- ☐ Both
- ☐ None

**\_\_\_\_ color having longest wavelength**

**Marks: 2**

- ☐ red
- ☐ yellow
- ☐ blue
- ☐ orange



**Out of phase means difference of \_\_\_\_ degree.**

**Marks: 2**

- ☐ 0
- ☐ 180
- ☐ 90
- ☐ A and B

**Intensity and amplitude of light relation**

**Marks: 2**

- ☐ I proportional to  $A^2$
- ☐ I inversly proportional to A
- ☐  $I = A$
- ☐ None

**If two waves having same phase and ampere the resultant wave will be**

**Marks: 2**

- ☐ zero
- ☐ double
- ☐ half
- ☐ none

**Condition for reverbration is \_\_\_\_**

**Marks: 2**

- ☐ occurs in open hill area
- ☐ occurs in close room
- ☐ a and b both
- ☐ none



**Mass of object is 15 Kg what work required to lift it upto 1.5m ?**

**Marks: 2**

- ☐ 200J
- ☐ 210J
- ☐ 225J
- ☐ 220J

**Unit of kinetic energy**

**Marks: 2**

- ☐ W
- ☐ J
- ☐ A
- ☐ K

**Work is \_\_\_\_\_ quantity**

**Marks: 2**

- ☐ scalar
- ☐ vector
- ☐ cant say
- ☐ none

**Unit of power**

**Marks: 2**

- ☐ Watt
- ☐ J/S
- ☐ kW
- ☐ All of Above

