| Name:_____ | 1st YEAR Test Session 2021-22 | Physics | Time Allowed: 45 M |
|---|---|---|---|
| Roll#_____ Section:_____ | Syllabus: Ch#07 | Total Marks: 30 | Obt Marks: |
| Think Positive , Live Happy | | Change Thoughts , Change Society | |

| Q# | A | B | C | D | Q# | A | B | C | D | Q# | A | B | C | D | Q# | A | B | C | D | Q# | A | B | C | D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01. | ○ | ○ | ○ | ○ | 02. | ○ | ○ | ○ | ○ | 03. | ○ | ○ | ○ | ○ | 04. | ○ | ○ | ○ | ○ | 05. | ○ | ○ | ○ | ○ |
| 06. | ○ | ○ | ○ | ○ | 07. | ○ | ○ | ○ | ○ | 08. | ○ | ○ | ○ | ○ | 09. | ○ | ○ | ○ | ○ | 10. | ○ | ○ | ○ | ○ |

**Q. No. 1** **You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, Fill bubble sheet that option. Cutting, Over-writing, using lead pencil and filling more than one circle will result in zero marks in that question. (10x1=10)**

| Sr.# | Questions | A | B | C | D |
|---|---|---|---|---|---|
| 1 | In SHM of simple pendulum restoring force is provided by | Air Resistance | Tension in string | Force of gravity | Inertia |
| 2 | The SI unit of frequency is | Hz | N | Cycle/ sec | A and C |
| 3 | At extreme position the velocity of body is | max | min | Both | None |
| 4 | Amplitude of a vibrating body is a | Displacement | Vector | Both | scalar |
| 5 | If the length of simple pendulum becomes four times then its time period will become | 2time | 4time | 6time | same |
| 6 | The mathematical form of Hook's law is | F=kx | F=-kx | both | none |
| 7 | In simple pendulum horizontal component is balanced by | Tension force | Restoring force | Electric force | Magnetic force |
| 8 | Resonance occurs when frequency of two vibrating bodies is | Same | Opposite | Both | Equal |
| 9 | In damped oscillation amplitude of vibration ----- with respect to time. | increase | decrease | Both | None |
| 10 | For smaller damping amplitude will be | Equal | Small | Large | Same |

**Q#:2 Answer the Following short Questions (6x2=12)**

| | | | |
|---|---|---|---|
| **i.** | Name two characteristics of simple harmonic motion. | **ii.** | Define the term resonance and phase? |
| **iii.** | Does frequency depends on amplitude for harmonic oscillations? | **iv.** | What is driven harmonic oscillator? |
| **v.** | What happens to the period of a pendulum if its length is doubled? What happens if the suspended mass is doubled? | **vi.** | What is meant by phase angle? Does it define angle between maximum displacement and the driving force? |

**Q#:3 Answer the Following short Questions (5+3=8)**

**(a)** Explain a horizontal mass spring system.

**(b)** A block of mass 4.0Kg is dropped from a height of 0.80m on to a spring of spring constant k= 1960$Nm^{-1}$ , find the maximum distance through which the spring will be compressed.