**[Model Paper](http://www.result.pk)**

**[Physics](http://www.result.pk)** [-](http://www.result.pk) **[I](http://www.result.pk)**

**[Total Time: 3 Hours Max: Marks: 85](http://www.result.pk)**

**[Note:](http://www.result.pk)** **[There are THREE Sections of this Paper i.e. A.B and C, attempt each according to the given instructions.](http://www.result.pk)**

**[Time: 20 Minutes](http://www.result.pk)****[SECTION-A](http://www.result.pk)** **[Marks: 18](http://www.result.pk)**

**[Note:](http://www.result.pk)** [Attempt all parts of Section – A. Section –A must be return to the superintendent after 20 minutes](http://www.result.pk)

[even if you have not attempted any question. Overwriting/ defacing/Cutting etc is prohibited in](http://www.result.pk)

[Section-A and no credit will be given to such answer.](http://www.result.pk)

**[I.                   Write the correct option i.e. A/B/C/D in the empty boxes.](http://www.result.pk)**

[i.           http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image001.gifWhich of the following has the smallest value \_\_\_\_\_\_\_\_\_\_\_\_\_.](http://www.result.pk)

[(A) 1mmhttp://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image003.gif1Pm (B) 1cmhttp://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image003.gif1Km (C) 1Gmhttp://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image003.gif1Em (D) 1nmhttp://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image003.gif1m](http://www.result.pk)

[ii.         Dimension of plank constant is \_\_\_\_\_\_\_\_\_\_\_\_\_.http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image007.gif](http://www.result.pk)

[http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image007.gif(A) http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image009.gif (B) http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image011.gif (C) http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image013.gif (D) All of these](http://www.result.pk)

[iii.       Significant figure in http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image015.gif are \_\_\_\_\_\_\_\_\_\_\_\_\_.](http://www.result.pk)

[(A) 3 (B) 4 (C) 5 (D) 7](http://www.result.pk)

[http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image007.gifiv. For which angle, http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image017.gifare equal \_\_\_\_\_\_\_\_\_\_\_\_\_.](http://www.result.pk)

[(A) http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image019.gif (B) http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image021.gif (C) http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image023.gif (D) http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image025.gif](http://www.result.pk)

[http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image001.gif](http://www.result.pk)

[v.         What is the minimum number of unequal vector to result in a null vector \_\_\_\_\_\_\_\_.](http://www.result.pk)

[(A) 2 (B) 3 (C) 4 (D) All of these](http://www.result.pk)

[vi.       Which of the following instruments works on the principal of moments \_\_\_\_\_\_\_\_\_.http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image007.gif](http://www.result.pk)

[(A) Spring balance (B) Physical balance (C) Vernier calliper(D) Screw guage](http://www.result.pk)

[vii.     What does not change when force is applied on a body \_\_\_\_\_\_\_\_\_\_\_\_.http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image007.gif](http://www.result.pk)

[(A) Acceleration (B) Speed (C) Position (D) Mass](http://www.result.pk)

[viii.   The range of projectile is maximum at an angle of \_\_\_\_\_\_\_\_\_\_\_\_\_.](http://www.result.pk)

[(A) http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image019.gif (B) http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image023.gif (C) http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image027.gif (D) http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image021.gif](http://www.result.pk)

[ix.       http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image028.gifAn example of non-conservative force is \_\_\_\_\_\_\_\_\_\_\_\_\_.](http://www.result.pk)

[(A)Electric force (B) Gravitational force(C)Frictional force(D) Magnetic force](http://www.result.pk)

[x.         http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image007.gifWhich one is constant for a satellite in orbit \_\_\_\_\_\_\_\_\_\_\_\_\_.](http://www.result.pk)

[(A) Velocity (B) K.E (C) P.E (D) Angular momentum](http://www.result.pk)

[xi.       Linear acceleration http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image030.gif when “http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image032.gif” is \_\_\_\_\_\_\_\_\_\_\_\_\_.](http://www.result.pk)

[(A) http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image034.gif (B) http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image027.gif (C) http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image036.gif (D) http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image025.gif](http://www.result.pk)

[xii.     With the increase of temperature, viscority of fluid is \_\_\_\_\_\_\_\_\_\_\_\_\_.http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image007.gif](http://www.result.pk)

[(A) Increase (B) Same (C) Decrease (D) Double](http://www.result.pk)

[http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image038.gifxiii. Bernaulli’s equation is based upon law of conservation of \_\_\_\_\_\_\_\_\_\_\_\_\_.](http://www.result.pk)

[(A) Mass (B) Momentum (C) Energy (D) None of these](http://www.result.pk)

[http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image007.gifxiv. Time period of a second pendulum is \_\_\_\_\_\_\_\_\_\_\_\_\_.](http://www.result.pk)

[(A) 0.5 s (B) 1 s (C) 2 s (D) 2.5 s](http://www.result.pk)

[http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image038.gifxv. When sound waves travel from air to water, which of the following remains](http://www.result.pk)

[constant \_\_\_\_\_\_\_\_\_\_\_\_\_.](http://www.result.pk)

[(A) Velocity (B) Wave length (C) Frequency (D) All of these](http://www.result.pk)

[http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image038.gifxvi. Sound waves travel faster in \_\_\_\_\_\_\_\_\_\_\_\_\_.](http://www.result.pk)

[(A) Air (B) Water (C) Solid (D) Vacume](http://www.result.pk)

[http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image038.gifxvii. In an adiabatic proceses, which of the following remains constant \_\_\_\_\_\_\_\_\_\_\_\_\_.](http://www.result.pk)

[(A) Heat (B) Temperature (C) Volume (D) Work](http://www.result.pk)

[http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image038.gifxviii. The unit of entropy is \_\_\_\_\_\_\_\_\_\_\_\_\_.](http://www.result.pk)

[(A) http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image040.gif (B) http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image042.gif (C) http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image044.gif (D) Kelvin](http://www.result.pk)

**[Model Paper](http://www.result.pk)**

**[Physics](http://www.result.pk)** [-](http://www.result.pk) **[I](http://www.result.pk)**

**[Note:](http://www.result.pk)****[Time allowed for section B and C is 2 hours and 40 minutes.](http://www.result.pk)**

**[SECTION “B” Marks: 40](http://www.result.pk)**

[II.                Attempt any TEN Parts out of the following. Each Part carries equal marks.](http://www.result.pk)

[i. Differentiate between light year & year?](http://www.result.pk)

[ii. Why do Buses & Heavy Trucks have large stearing wheals?](http://www.result.pk)

[iii. Define impulse & how it is related to momentum ?](http://www.result.pk)

[iv. What is the angle for which the maximum height & range are equal?](http://www.result.pk)

[v. Why energy saver are used instead of normal bulb?](http://www.result.pk)

[vi. A Spherical body is drop in two different fluids, & its terminal velocity is different, why?](http://www.result.pk)

[vii. Why a car has oblauge shape design?](http://www.result.pk)

[viii. What happens to the time period of simple pendulum of its time period is four times?](http://www.result.pk)

[ix. Differentiate between free & forced oscillation?](http://www.result.pk)

[x. What is the difference between longitudinal & transverse wave?](http://www.result.pk)

[xi. What is diffraction gratting?](http://www.result.pk)

[xii. Why does the pressure of the air in automobile tyre increase, when driven for a while?](http://www.result.pk)

[xiii. What is the difference b/w reversible & irreversible process?](http://www.result.pk)

**[SECTION “C” Marks: 27](http://www.result.pk)**

**[Note: Attempt any THREE questions of the following. Each question carries equal Marks.](http://www.result.pk)**

**[III.](http://www.result.pk)** [(a) What is Collission? Calculate final velocities of two elastically colliding bodies in one dimension.](http://www.result.pk)

[(b) A 70kg ball travelling at a speed of http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image046.gifto the right collides with another ball of 140g,](http://www.result.pk)

[which is initially at rest. Find their velocities after collision?](http://www.result.pk)

**[IV.](http://www.result.pk)** [(a) Prove that Absolute P.E = http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image048.gif](http://www.result.pk)

[(b) The moon’s radius is http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image050.gif & the acceleration due to gravity, g = http://www.bisess.edu.pk/model_papers_hssc/hssc_physics_files/image052.gif on its surface.](http://www.result.pk)

[Find out the escape velocity from moon’s surface.](http://www.result.pk)

**[V.](http://www.result.pk)** [(a) Prove that the projection of a body motion in a circle describes S.H.M.](http://www.result.pk)

[(b) What should be the length of simple pendulum whose time period is one second? What is](http://www.result.pk)

[its frequency?](http://www.result.pk)

**[VI.](http://www.result.pk)** [(a) What is meant by a heat engine? What is its main purpose? How is its efficiency defined?](http://www.result.pk)

[(b) Find the efficiency of a cornot’s engine working between the steam & ice points.](http://www.result.pk)