INDIAN SCHOOL MUSCAT

ANNUAL EXAMINATION

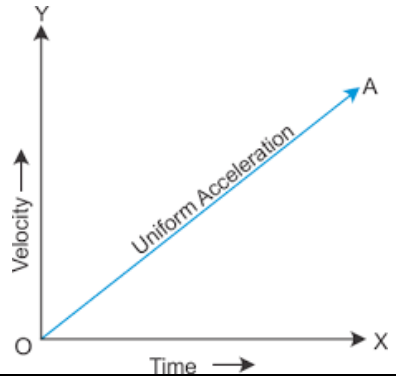
FEBRUARY 2020

SET A

CLASS IX

Marking Scheme – SCIENCE [THEORY]/PHYSICS

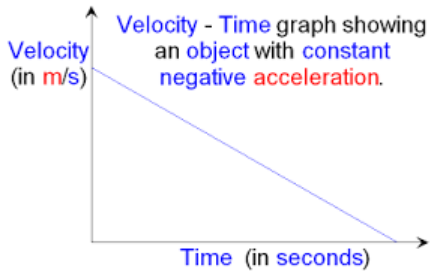
SECTION - A		
Q.NO.	ANSWER	MARKS
3	**Answer question numbers 3(a) - 3(d) on the basis of your understanding of the following paragraph and the related studied concepts.** PHY	
3(a)	(iv)momentum	1
3(b)	(ii)recoil velocity	1
3(c)	(ii)always act on different bodies in opposite directions	1
3(d)	(i)20 N away from the wall	1
5	(ii) 100g OR (iv) 8g/mL	1
6	(iii) 65	1
7	(i) 8cm/s	1
	For question numbers 13 and 14, two statements are given- one labeled *Assertion* (A) and the other labeled *Reason* (R). Select the correct answer to these questions from the codes (i), (ii).(iii) and (iv) as given below i) **Both A and R are true and R is correct explanation of the assertion.** ii) **Both A and R are true but R is not the correct explanation of the assertion.** iii) **A is true but R is false.** iv) **A is false but R is true**	
14	(iv)A is false ,but R is true	1

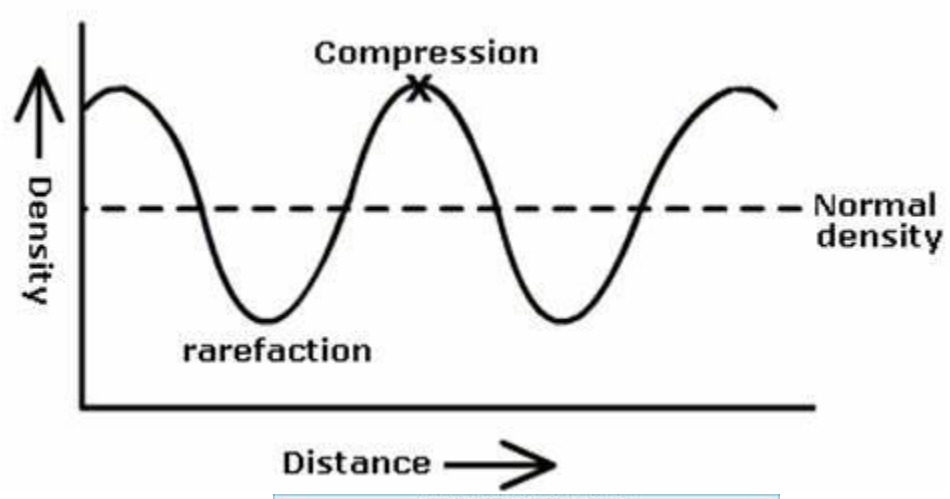
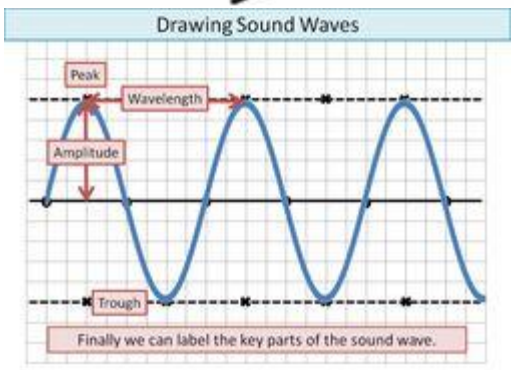
	SECTION - B	
22	i)Distance travelled : Length of the actual path travelled by the object during motion is called distance travelled. It is a scalar quantity. Displacement : The shortest distance between the initial position and final position is called displacement. It is a vector quantity. ii) graph  	2 1
23	i)Force = mass x acceleration F = ma = 12 x 2 =24 N If the force is doubled F = 48 N Acceleration = F/ m =48 /12 = 4m/s^2	1 1 1
24	i)Every object in the universe attracts every other object with a force which is directly proportional to the product of the masses and inversely proportional to the square of the distance between them . ii) Force becomes Four times. iii) Both will reach the ground simultaneously. Acceleration due to gravity does not depend on mass of the body. OR i)When a body is partially or completely immersed in a fluid. It experiences an upward force which is equal to the weight of the fluid displaced by the body. ii) Volume of the body , Density of the fluid iii)Relative Density = 0.8 x 1000 = 800 kg/m^3	1 1 1 1 1 1
	SECTION- C	
29	i)Work done (W) =F x S ii) When direction of displacement is opposite to direction of force. Any one example ,with explanation iii) P = W/t = mgh /t =40 x50 x 0.1 x10/5 =400 W	1 2 2
30	i)Sound Navigation And Ranging ii) Figure A sonar, which is installed in a ship or a boat consists of a transmitter and a detector. The ultrasonic waves produced by the transmitter travel through water. After getting reflected from the seabed, the waves are collected by the detector. The receiver converts the waves into electrical signals .Knowing the time interval (t) between transmission and reception of the reflected wave and the speed of ultrasonic wave in the sea water(v), depth of the ocean can be calculated by the formula d = v t /2 OR i) Longitudinal wave : If the particles of the medium vibrate parallel to the direction of propagation of the wave, they are called longitudinal wave. Transversal wave: If the particles of the medium vibrate perpendicular to the direction of	1 1 3 2

	propagation of the wave, they are called transverse wave. ii)Echo : The repetition of sound after reflection from an obstacle is called echo. Reverberation : Repeated reflection of sound results in the persistence of sound is called reverberation. iii) Multiple reflection	2 1
	End of the Question Paper	

SET- B

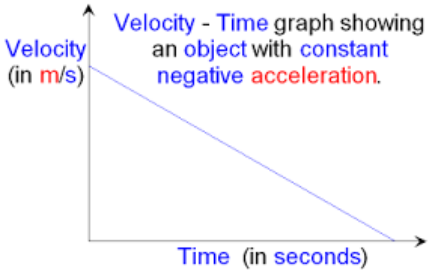
SECTION - A		
Q.NO.	ANSWER	MARKS
3	**Answer question numbers 3(a) - 3(d) on the basis of your understanding of the following paragraph and the related studied concepts.** PHY	
3(a)	(i)always act on different bodies in opposite direction	1
3(b)	(iv)momentum	1
3(c)	(ii) recoil velocity	1
3(d)	(ii) 20 N away from the wall	1
5	(d)100g OR 10g/mL	1
6	40degree	1
7	8cm/s	1
	For question numbers 13 and 14, two statements are given- one labeled *Assertion* (A) and the other labeled *Reason* (R). Select the correct answer to these questions from the codes (i), (ii).(iii) and (iv) as given below i) **Both A and R are true and R is correct explanation of the assertion.** ii) **Both A and R are true but R is not the correct explanation of the assertion.** iii) **A is true but R is false.** iv) **A is false but R is true**	
14	(iv)A is false but R is true	1
SECTION - B		

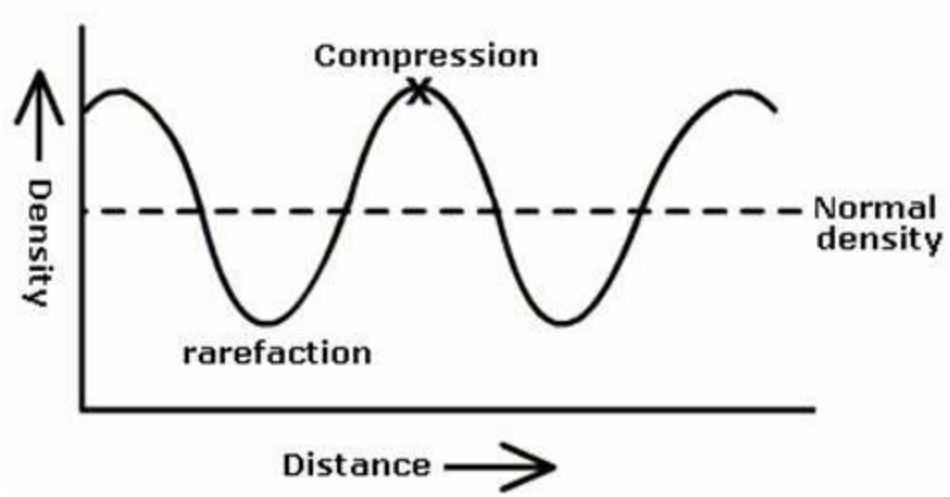
22	b)When a body travels along a circular path with uniform speed ,it is said to be in uniform circular motion c) Acceleration is towards the centre of the circle along the radius a)  	1 1 1
23	(i)The rate of change of linear momentum is directly proportional of a body is directly proportional to the external force applied on the body, and this change takes place in the direction of force. (ii) One Newton is that force which produces an acceleration of $1m/s^2$ in a body of mass !kilogram (iii)Due to force of friction	1 1 1
24	i)Mass : Quantity of matter in an object is called ,mass .It is constant everywhere. Weight: It is the force with which an object is attracted towards the earth. It changes from place to place (any two difference) (ii)Acceleration due to gravity at the poles is more than at the equator. OR V^2—u^2= 2gh : 0 -40x 40 = 2x (-10) x h : h =80m Maximum height =80m Total distance travelled = 2x 80 =160 m Displacement = 0	2 1 1 1 1
	SECTION- C	
29	i)Introduction and figure Derivation of Kinetic Energy ii) If the velocity is doubled , kinetic energy becomes four times .(Steps should be shown)	1 2 2
30	i)Repeated reflection of sound results in the persistence of sound is called reverberation. Any one method to reduce reverberation. ii) Figure To detect flaws in a block, ultrasonic waves pass through it. Transmitted waves are detected by detectors. Ultrasonic waves pass through the flawless portions of the block. But they are reflected by even a minor defect and do not reach the detector. OR i)If the particles of the medium vibrate parallel to the direction of propagation of the wave ,they are called longitudinal waves. Eg: sound wave ii)	1 1 1 2 2 1

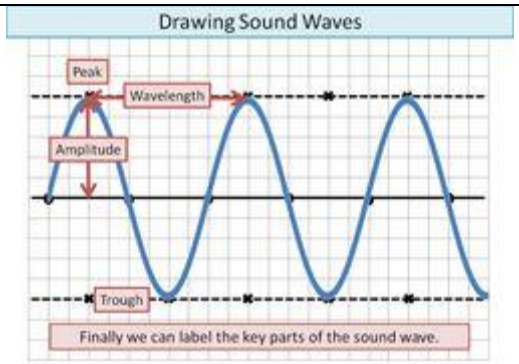
	 	1 1
	End of the Question Paper	

SET – C

SECTION – A		
Q.NO.	ANSWER	MARKS
3	**Answer question numbers 3(a) - 3(d) on the basis of your understanding of the following paragraph and the related studied concepts.** PHY	
3(a)	(ii)recoil velocity	1
3(b)	(ii)always act on two different bodies in opposite directions	1

3(c)	(iv) momentum	1
3(d)	(i)20N away from the wall	1
5	(i)100g OR (iv)15g/mL	1
6	(i)35degree	1
7	(i)8cm/s	1
	For question numbers 13 and 14, two statements are given- one labeled *Assertion* (A) and the other labeled *Reason* (R). Select the correct answer to these questions from the codes (i), (ii).(iii) and (iv) as given below i) **Both A and R are true and R is correct explanation of the assertion.** ii) **Both A and R are true but R is not the correct explanation of the assertion.** iii) **A is true but R is false.** iv) **A is false but R is true**	
14	(i)Both A and R are true and R is the correct explanation for the Assertion.	1
	SECTION – B	
22	i)  ii)When a body travels along a circular path with uniform speed ,it is said to be in uniform circular motion iii) Acceleration is towards the centre of the circle	1 1 1
23	i)Force = mass x acceleration ii)F = ma = 12 x 2 =24 N If the force is doubled F = 48 N Acceleration = F/ m =48 /12 = 4m/s^2	1 1 1
24	i)Mass : Quantity of matter in an object is called ,mass .It is constant everywhere. Weight: It is the force with which an object is attracted towards the earth. It changes from place to place (any two difference) (ii)Acceleration due to gravity at the poles is more than at the equator. OR	2 1

	V^2—u^2= 2gh : 0 -40x 40 = 2x (-10) x h : h =80m Maximum height =80m Total distance travelled = 2x 80 =160 m Displacement = 0	 1 1 1
	SECTION- C	
29	i)Introduction and figure Derivation of Kinetic energy ii)P =0.1kW; t = 5 x10 =50h E = P x t = 0.1 x 50 = 5 kWh	1 2 2
30	Sound Navigation And Ranging A sonar, which is installed in a ship or a boat consists of a transmitter and a detector. The ultrasonic waves produced by the transmitter travel through water. After getting reflected from the seabed, the waves are collected by the detector. The receiver converts the waves into electrical signals .Knowing the time interval (t) between transmission and reception of the reflected wave and the speed of ultrasonic wave in the sea water(v), depth of the ocean can be calculated by the formula d = vt/2 OR i)If the particles of the medium vibrate parallel to the direction of propagation of the wave ,they are called longitudinal waves. Eg: sound wave ii)  iii)Mark amplitude and wavelength	1 4 2 1 1 1



End of the Question Paper