

MAYOOR SCHOOL, AJMER
Science and Technology/ IX/Annual Examination/ Thursday/ March 5TH 2009
(Time Allowed: 2Hours 30 Minutes)

MM: 60
VKS115

IX A- VKS, NRC, NSF
IX B- SJR, RTC, RNY
IXC- SDC,NRC,NSF

General Instructions

1. The question paper consists of two sections A and B Please make sure that this question paper consists of 4 printed sides.
2. All questions are compulsory.
3. Physics, chemistry and biology are to be attempted on separate answer sheets.

MM-18

PHYSICS

- Q.1 Is it possible that a force is acting on a body but still the work done is zero?
Give an example? (1)
- Q.2 When the bus starts suddenly the passenger standing on it lean backward in the bus.?
Name the law which explains this. (1)
- Q.3 Why does a block of plastic released under water come up to the surface of water? (1)
- Q.4 Give two difference between mass & weight? (2)
- Q.5 Explain Newton's II law of motion with the help of two examples? (2)
- Q.6 Figure shows a smooth metal blocks about to slide down BD. Along DE and up EF.
BD and DE are friction free surface, but EF is rough. The blocks stops at F.
- (a) Sketch the speed time graph for the journey from B to F. Label D, E and F on the graph. (1)
- (b) The mass of the block is 0.2kg The vertical height of B above A is 0.6m. The acceleration due to gravity is 10m/s.
- (i) Calculate the work done in lifting the block from A to B. (1)
- (ii) At C the block is moving at a speed of 2.5m/s . Calculate the kinetic energy at C. (1)
- Q.7 Given figure shows the velocity time graph for a bus during a test. At time $t=0$, the driver starts to brake
- (i) How long the bus takes to stop (1/2)
- (ii) State which part of the graph shows greatest deceleration (1/2)

(iii) Use the graph to determine how far the bus travels in first 2 seconds. (2)

Q.8(i) What is an Echo? Find the minimum distance required for Echo to be heard in a closed room.

(ii) A man standing in a gorge between two large cliffs Gives a short sharp shout. He hears two echoes the first after 1s and next after 1.5 s is 340ms^{-1} . Calculate the distance of the man from each cliff and distance between the cliff.

(5)

OR

(i) How does the sonar work ? explain with the help of diagram?

(ii) A submarine emits a sonar pulse which returns from an underwater cliff in 2.04s. if the speed of sound in salt water is 1531m/s how far away is the cliff ?

(5)