

FIRST TERM EVALUATION 2014 - '15

Physics

Time : 1½ hrs.

Std. 9

Score : 40

Instructions :

- ▲ The first 15 minutes of cool - off time.
- ▲ This time is to be spent for reading the question paper.
- ▲ You are not supposed to write anything during the cool - off time.
- ▲ Read the instructions carefully and attempt the questions.

1. Total momentum of gun and bullet before firing is
a) Positive b) Negative c) Zero d) cannot be predicted (1)
2. Draw a distance - time graph using the data given in the table (3)

Time (s)	0	1	2	3	4	5
Distance (m)	0	20	40	60	80	100

3. A 10 g bullet is shot from a 5 kg gun with a velocity of 400m/s
What is the velocity of recoil of the gun? (3)
4. A car and a truck moving with the same velocity in opposite directions collide and the collision lasts for 2s
a) Which vehicle experiences the greater force of impact? (1)
b) Which one undergoes greater acceleration? (1)
5. Observe the picture



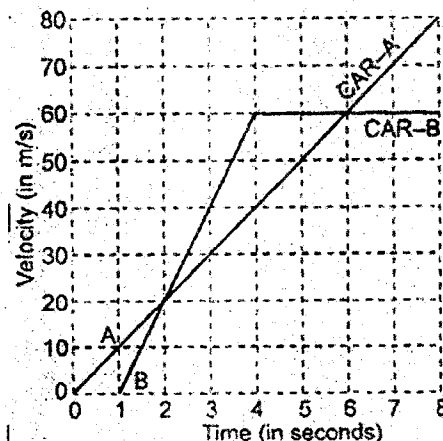
- a) What happens when the boy throws the bag towards the girl (1)
- b) What could be the reason for this? (1)
6. "Every action has equal and opposite reaction"
Write the action and reaction forces in the following situations (2)

Situation	Action	Reaction
a) A person jumps to the shore from a boat	-----	-----
b) A bullet is fired from a gun	-----	-----

7. Deduce the equation $F = ma$ from Newton's second law of motion Hints:- Rate of change of momentum = $\frac{mv - mu}{t}$

(P.T.O.)

8. Give reason
- A cricket player lowers his hand while catching a ball (2)
 - A porter carrying luggage on his back bends forward (2)
9. a) What do you mean by the term free fall? (1)
 b) Write an example of free fall? (1)
10. A man weighs 600 N on the earth
- What is his mass? (2)
 If he was taken to the moon, his weight would be 100N.
 - What is his mass on the moon? (1)
 - What is the acceleration due to gravity on the moon (2)
11. A Wave machine produces 300 waves in one minute
 Find the following
- Frequency (1 1/2)
 - Period (1 1/2)
12. Select the statements suitable for longitudinal waves and (2)
- waves on the surface of water
 - particles vibrate along the direction of wave motion
 - travel in the form of alternate crest and troughs
 - cause changes in the pressure of the different parts of the medium
13. How is the period of a simple pendulum affected in the following situations (2)
- The length of the string is made four times
 - the mass of the bob is doubled
 - amplitude of the swing is made half
 - the mass of the bob is reduced to half
14. State two methods to increase the stability of a body (2)
15. The displacement time graph of motion of two cars A and B is given below. Calculate the acceleration of car. B Between 2 second and 4th second (2)



16. Calculate the wavelength of the waves generated by a tuning fork of frequency 256Hz. Velocity of the wave in air at ordinary conditions is 340 m/s (2)