All 1 mark unless [stated]

1) If gravity is an attractive force, why does the moon not fall onto the earth?

[2]

2) What is a force?

3) What is the word for a transfer of one kind of energy to another?

4) An object’s ——— is proportional to the force acted upon it, and ——— / ——— to it’s ———

[3]

5) why is it harder to throw a bowling ball than a tennis ball?

6) What do you need to do to get the bowling ball to go just as far when you throw it?

7)

What is the difference between speed and velocity?

8) How much harder do you have to push to move a 2 tonne van than a 1 tonne car along a smooth flat surface?

9) How much harder does gravity have to pull to move a 2 tonne van than a 1 tonne car dropped from 1 mile up?

10) With how much more force will gravity pull on the van?

11) Therefore which vehicle will fall hit the ground first (within a1/10th of a second margin of error)?

12) A feather takes much longer to reach the ground than a van. Why? One word answer only.

13) What unit is force measured in?

14) What unit is acceleration measured in?

15) You can juggle (if you can juggle) balls whilst travelling in a train at 100 mph in a straight line. When the train goes round a corner it doesn’t work and you drop the balls.

Why is this? One word answer only.

16) The train is going straight again (at 100mph). You throw a 50 gram ball 1m straight up in the air for 1 second.

How far back do you need to move you arm from where it was to catch the ball?

17) This is a description of a section of the train’s journey:

Start from stationary, accelerate over 1min to a speed of 100mph. Continue for3 mins, decelerate over 1 min, stop for 2 min at first station (Braintree in Essex).

Draw either a distance/time graph or a speed/time graph

[3 marks]