PHYSICS WORKSHEET

EQUATIONS OF MOTION

1. A boy drops a pile of roof shingles from the top of a roof located 8.52 meters above the ground. Determine the time required for the shingles to reach the ground.
2. Leo throws his mother's crystal vase vertically upwards with an initial velocity of 26.2 m/s. Determine the height to which the vase will rise above its initial height.
3. A rocket is fired vertically upward with an initial velocity of 29Km/s.

Find the rocket's maximum altitude.

1. A stone is thrown vertically upwards with a velocity of 4.9 ms-1. Calculate
2. The maximum height reached?
3. The time taken to reach the maximum height?
4. The velocity with which it returns to the ground?
5. The time taken to reach the ground?
6. A rocket is fired vertically from the ground with a resultant vertical acceleration of 10 ms-2. The fuel is finished in 1 minute and it continues to move up. What is the maximum height reached?
7. On a foggy day two drivers spot each other when they are just 80 m apart. They are travelling at 72 km/h and 60 km/h respectively. Both of them applied brakes retarding their cars at the rate of 5 m/s2. Determine whether they avoid collision or not?
8. A jet plane starts from rest with an acceleration of 3m/s2 and makes a run for 35 s before taking off. What is the minimum length of the run way and what is the velocity of the jet at take off?
9. An electron travelling with a speed of 5×103 m/s-1 passes through an electric field with an acceleration of 1012 m/s2
10. How long will it take for the electron to double its speed?
11. What will be the distance covered by the electron in this time?
12. A body covers 12 m in 2nd second and 20 m in 4th second. How much distance will it cover in 4 seconds after the 5th second?
13. A food packet released from a helicopter which is rising steadily at 2m/s. After 2 seconds
14. What is the velocity of the packet?
15. How far is it below the helicopter?
16. A parachutist bails out from an aeroplane and after dropping through a distance of 40m he opens the parachute and decelerates at 2ms-2. If he reaches the ground with a speed of 2 ms-1, how long is he in the air? At what height did he bail out from the plane?
17. Two balls are thrown simultaneously, A vertically upwards with a speed of

20 ms-1 from the ground, and B vertically downwards from a height of 40 m with the same speed and along the same line of motion. At what points do the two balls collide?