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| **NEW INDIAN MODEL SCHOOL, SHARJAH**  **WORK SHEET– 2014-2015**  **PHYSICS**  **(Gravitation, work power energy)**  **Grade: XI(K.B) Date: . 06.2014** |

* ***Complete all the rough record and fair record work***
* ***Prepare an assignment on mangalyan***
  + ***Specifications***
    - * ***Introduction***
      * ***purpose***
      * ***Working***
      * ***Achievements***
      * ***Conclusions***
      * ***Should not exceed 10 pages minimum of 7 pages***
      * ***Include pictures wherever necessary***

1. A point mass M is located at x=0
2. Which of the following graph represents variation of gravitational intensity with distance from the mass
3. (ii) What do you mean by gravitational intensity

mt

mt

Fig a R fig b R

mt

mt

R R

Fig c fig d

1. Two artificial satellite one close to the surface and the other away are revolving around the earth which has greater speed ?
2. A bullet of mass 20g pierces through a plate of mass 1kg and then comes to rest inside a second plate of mass 2.98kg as shown in fig it is found that two plate initially at rest now move with equal velocity . Find the percentage loss of the initial velocity of the bullet when it is between the plates

v v

1. Collision between two particles need not be the physical contact of two particles as in the case of scattering of the α particles by a nucleus
2. What is the quantity that remains conserved in all types of collisions?
3. Suppose an electron and proton are projected with equal KE What will be the ratio of their linear momentums if the proton is 1830 times heavier than an electron?
4. The bob of a pendulum released from 30° to the vertical hits on another bob of equal mass at rest. How high does the first bob rise after the collision. Assume that the collision is elastic and the size of the bobs are negligible.
5. A car of mass 2000kg is lifted up a distance of 30m by a crane A in 1 minute. The second crane B does the same job in 2 min.
6. Which does more work
7. Which crane consume more fuel ? Explain your answer.
8. What is the power applied by each crane
9. If the efficiency of crane A is 55% What should be the input power?
10. Two cricket balls are colliding with each other
11. Name the collision
12. Say whether the law of conservation of KE holds good in this case. Why?
13. State and prove the other conservation laws applicable here
14. Is there any constant associated with gravitation?
15. If so define it using an equation connected with it?
16. Obtain its dimension
17. What is its unit

B •A

A•

1kg B

1. (ii)

A small sphere (A) of radius .5m and mass 1kg is inside a shell (B) of radius 2m and

Mass 10kg.

1. What is the force on A?
2. What would be the force if A is at a distance 7.5m from the surface of B?

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