INTERNATIONAL INDIAN SCHOOL BURAIDAH
WORKSHEET FOR THE ACADEMIC YEAR 2026-27
Class-11 Subject: Physics
CH#7 GRAVITATION

1.There is no atmosphere on the moon because

a) it is closer to the earth

b) it revolves round the earth

c) it gets light from the sun

d) the escape velocity of gas molecules is less than their root mean square velocity here.

2) If the distance between two masses is doubled, the gravitational attraction between them

a) Is doubled b) Becomes four times c) Is reduced to half d) Is reduced to a quarter.

3) Where will it be profitable to purchase one-kilogram sugar?

a) at poles b) at equator c) at 45° latitude d) at 40° latitude

4) The masses of two planets are in the ratio 1: 2. Their radii are in the ratio 1: 2. The acceleration due to gravity on the planets are in the ratio.

a) 1: 2 b) 2: 1 c) 3: 5 d) 5: 3

5) The period of revolution of the planet A round the sun is 8 times that of B. The distance of A from the sun is how many times greater than that of B from the sun?

a) 5 b) 4 c) 3 d) 2

6) A body weighs 500 N on the surface of the earth. How much would it weight half way below the surface of the earth? (a) 1000 N (b) 500 N (c) 250 N (d) 125 N

In the following questions, a statement of assertion (A) is followed by a statement of reason (R). Mark the correct choice as:

a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.

c) If Assertion is true but Reason is false.

d) If both Assertion and Reason are false.

7) Assertion: A planet moves faster, when it is closer to the sun in its orbit and vice versa

Reason: Orbital velocity for an orbiting planet is constant.

8) Assertion: Gravitational potential of earth at every place on it is negative

Reason: Every body on earth is bound by the attraction of earth.

9) Assertion: Objects appear 'weightless' inside an orbiting spacecraft.

Reason: Objects in circular motion experience centripetal force

10) Assertion: The escape velocity from the surface of Jupiter is found to be less than that from the earth's surface Reason: The radius of Jupiter is smaller than that of earth.

11. Define escape velocity. Derive an expression for the escape velocity of a body from the surface of Earth.

12. Define acceleration due to gravity and show that gravity decreases with depth

13. Gravitational force between two bodies is 1 N. If the distance between them is made twice, what will be the force?

14. (i) Define gravitational potential at a point. Is it scalar or vector quantity?

(ii) Obtain an expression for gravitational potential at a point due to earth.

15. State Kepler’s laws of planetary motion