UNIT 5
GRAVITATION

MULTIPLE CHOICE QUESTIONS

1. ---------- predicted about artificial satellites about 300 years ago.
(a) Galileo **(b)** Newton
(c) Einstein **(d)** Faraday

2. Unit of gravitational field strength is:
(a) N **(b)** $N\ kg^{-1}$
(c) J **(d)** N m

3. Distance of moon from Earth is? **(GRW 2013, 2014)**
(a) 38, 000 km **(b)** 3, 80, 000 km
(c) 3, 000, 000 km **(d)** 30, 000 km

4. Speed of GPS satellite is:
(a) 7.9 kms^{-1} **(b)** 3.87 kms^{-1}
(c) 5.6 kms^{-1} **(d)** 5.0 kms^{-1}

5. If the distance between two masses is half then the force of gravitation becomes:
(a) One fourth **(b)** Four times
(c) Doubled **(d)** Half

6. In System International, the value of G is: **(GRW 2012)**
(a) $6.4 \times 10^{6}\ Nm^2kg^{-2}$ **(b)** $6.4 \times 10^{-11}\ Nm^2kg^{-2}$
(c) $6.67 \times 10^{11}\ Nm^2kg^{-2}$ **(d)** $6.67 \times 10^{-11}\ Nm^2kg^{-2}$

7. Radius of earth is:
(a) 6.4×10^{6} km **(b)** 6.4×10^{6} m
(c) 6×10^{6} m **(d)** 6×10^{6} km

8. The SI unit of gravitational force is:
(a) Nm^2kg^{-2} **(b)** Newton
(c) ms^{-2} **(d)** both "a" and "b"

9. What will be the value of G if mass of the earth becomes four times:
(a) No change **(b)** Four times
(c) One fourth **(d)** Doubled

10. The mass of Earth is approximately:
(a) 6.9×10^{24} kg **(b)** 6.0×10^{-24} kg
(c) 6.0×10^{24} kg **(d)** 5500×10^{24} kg

11. As we go up the value of G becomes:
(a) Unchanged **(b)** Increases
(c) Decreases **(d)** Doubled

12. The force which pulls the object towards the center of circle is known as ---------- force:
(a) Frictional **(b)** Coulomb
(c) Centripetal **(d)** Gravitational

13. When an object is at a height equal to radius of earth above the surface of the earth. What is the value of g_h? **(LHR 2013)**

(a) 4g **(b)** 2g
(c) g/2 **(d)** g/4

14. What is not true about g?
(a) g is different at different places **(b)** g is greater at poles
(c) g is less at poles **(d)** g decrease as go higher

15. If the weight of an object on the surface of earth is W. Its weight on the surface of moon will be:
(a) 6W **(b)** W/6
(c) W/4 **(d)** W/8

16. On mountains our weight will be ---------- as compared to weight on the surface of earth.
(a) Equal **(b)** Greater
(c) Less **(d)** None of above

17. If mass of both the bodies is 1kg and distance between their centers is 1m then the gravitational force will be equal to:
(a) G **(b)** g
(c) V **(d)** None of above

18. A satellite is revolving around the earth in a circular orbit. If the radius of the orbit is increased from R to 2R. What will be its velocity?
(a) $\sqrt{2}v$ **(b)** v^2
(c) v/2 **(d)** $\frac{v}{\sqrt{2}}$

19. An artificial satellite keeps on revolving around the earth in different orbits with uniform speed due to the?
(a) Gravitational force **(b)** Frictional force
(c) Coulmb force **(d)** Electromagnetic force

20. Relative velocity of Geostationary satellite with respect to earth is:
(a) 7.9 kms^{-1} **(b)** 11.2 kms^{-1}
(c) 9.8 ms^{-1} **(d)** Zero

21. If a rocket is fired vertically with a speed of ----------, it will start revolving around the earth: (GRW 2013, LHR 2015)
(a) 8 ms^{-1} **(b)** 8 kms^{-1}
(c) 9.8 ms^{-1} **(d)** 11.2 kms^{-1}

22. Height of the Geostationary satellite above the surface of earth is:
(a) 1000 km **(b)** 3600 km
(c) 36000 km **(d)** 42300 km

23. Gravitational force on the surface of earth is equal to:
(a) G **(b)** g
(c) W **(d)** All of above

24. Weight of the body of mass 10 kg on the surface of moon: (LHR 2016)
(a) 160 N **(b)** 16N
(c) 1.62 N **(d)** None of above

ANSWER KEY

Q.	Ans	Q.	Ans	Q.	Ans
1	b	11	a	21	b
2	b	12	c	22	d
3	b	13	d	23	c
4	b	14	c	24	b

5	b	15	b
6	d	16	c
7	b	17	a
8	b	18	a
9	a	19	a
10	c	20	d