Gravitation Objective GK Questions and Answers

MCQ on gravitation.> In this post I come up with some important general knowledge questions with answers on a very crucial topic called ***Gravitation***. These multiple choice questions are very important for upcoming exams for general science like SSC, CGL, CHSL, MTS, Railway Group-D, Group-C, IAS, UPSC Air force and Navy. Therefore I encourage you to practice these mcqs set like a quiz.

Gravitation is a fundamental attractive force between any two object in the universe. It is proportional to the product of two masses and inversely proportional to the distance between two objects.. Also you can read about this topic from the given link where I have made a detail explanation about it.

Gravitation – Physics > GK

Now lets test the following mcqs from gravitation.

Q.1> What is the name of attractive force which act between any two bodies in our universe?

A: Gravitational force
B: Coulomb attractive force
C: Nuclear force
D: Magnetic force

Answer

Gravitational force

Q.2> What is the value of Universal Gravitational Constant (G) in C.G.S unit?

A: $6.67 * 10^{-6}$ cgs unit
B: $6.67 * 10^{-7}$ cgs unit
C: $6.67 * 10^{-8}$ cgs unit
D: $6.67 * 10^{-10}$ cgs unit

Answer

$6.67 * 10^{-8}$ cgs unit

Q.3> What is the unit of Universal Gravitational Constant in SI unit?

A: N-m-Kg
B: N/m-Kg

C: N-m/Kg^2

D: N/m^2-Kg

Answer

N-m/Kg^2

Q.4> What is the value of gravitational acceleration on Earth?

A: 9.8 m-s^2

B: 9.8 m/s^2

C: 8.9 m-s^2

D: 8.9 m/s^2

Answer

9.8 m/s^2

Q.5> The value of gravitational acceleration is -

A: increases as height increase form the earth.
B: decreases as height increase from the earth.
C: remains constant
D: None of the above

Answer

Increases as height increase from the earth

Q.6> Where the value of gravitational acceleration is less due to the diurnal motion of earth?

A: At Polar region
B: At equator
C: Tropic of Cancer or Tropic of Capricorn
D: None of this

Answer

At equator

Q.7> In which region of earth the weight of a body is slightly greater?

A: At Polar region
B: At equator
C: Tropic of Cancer or Tropic of Capricorn
D: None of this

Answer

At polar region

Q.8> If speed of rotation of earth increases then what would be the value of weight of a body?

A: Weight of a body will increases
B: Weight of a body will decreases
C: Weight of a body remain constant
D: Can not be answered

Answer

Weight of a body will decreases

Q.9> What is the approximate mass of Sun?

A: $2 * 10^{34}$ kg
B: $2 * 10^{32}$ kg
C: $2 * 10^{30}$ kg
D: $2 * 10^{28}$ kg

Answer

$2 * 10^{30}$ kg

Q.10 What is the approximate mass of earth?

A: $3 * 10^{24}$ kg
B: $4* 10^{24}$ kg
C: $5* 10^{24}$ kg
D: $6 * 10^{24}$ kg

Answer

$6 * 10^{24}$ kg

Q.11 What is escape velocity?

A: Velocity of moon
B: Velocity of earth
C: Velocity of a body that allow it to go outside the earth
D: Tangential velocity of equator.

Answer

Velocity of a body that allow it to go outside the earth.

Q.12 What is the value of escape velocity of earth?

A: 9.8 km/sec
B: 10 km/sec
C: 11.2 km/sec
D: 12 km/sec

Answer

11.2 km/sec

Q.13 Does time period of artificial satellite depend on its mass?

A: Yes
B: No

Answer

No

Q.14 What would be the height of an artificial satellite so that it can be observed at same position with respect to earth?

A: 36000 km above the earth surface
B: 40000 km above the earth surface
C: 26000 km above the earth surface
D: 63000 km above the earth surface

Answer

36000 km above the earth surface.

Q.15 How much time a polar satellite take to complete one revolution around earth?

A: 1 hour 30 min.
B: 2 hours
C: 2 hour 20 min
D: 3 hour

Answer

2 hours

Q.16 What is the weight of a body inside an artificial satellite of earth?

A: It depends on the mass of the body
B: It depends on the velocity of satellite
C: Product of its mass and gravitational acceleration
D: Zero

Answer

Zero

Q.17 Does the gravitational force same for two objects inside and outside the water?

A: Yes
B: No

Answer

Yes

Q.18 What is the weight of a body of mass 1 kg?

A: 1 kg
B: 9.8 kg
C: 9.8 Kg-m/Sec^2
D: 9.8 N

Answer

Both C and D; [(Kg-m/Sec^2) = N]

Q.19 Weight of free fall object is

A: mass of the object * gravitational acceleration
B: Zero
C: greater than rest object
D: less than rest object

Answer

Zero

Q.20 Does escape velocity of a body depend on its mass?

A: Yes
B: No

Answer

No

Q.21 Let the escape velocity of earth is Ve. What would be the escape velocity of a planet whose mass and radius is double from earth?

A: Ve
B: 2 Ve
C: 4 Ve
D: 16 Ve

Answer

Ve ; escape velocity = $\sqrt{(2GM/R)}$

Note : G= universal gravitational constant; M = mass of planet; R = Radius of planet

Q.22 If the radius of earth is decrease keeping mass constant, then the length of day will

A: decrease
B: Increase
C: remain same
D: can not say

Answer

Decrease

Q.23 If the earth stop rotating then the weight of an object on north pole will

A: Increase
B: decrease
C: remain same
D: be zero

Answer

Remain same

Q.24 If a stone bring back to earth from moon then its

A: mass will be changed
B: mass and weight will be changed
C: Weight never be changed
D: mass remain constant but weight will be changed

Answer

Mass remain same but weight will be changed.

Q.25 Suppose an object is thrown upward with an angle θ providing velocity equal to escape velocity (Ve). The magnitude of escape velocity will be..

A: Ve
B: Ve Cosθ
C: Ve Sinθ
D: Ve tanθ

Answer

Ve

Q.26 While revolving an artificial satellite around earth, the required centripetal force is provided by -

A: fuel contained in the satellite
B: gravitational force due to sun
C: gravitational force due to earth
D: Thrust produced by burning fuel

Answer

gravitational force due to earth.

Q.27 In case of planet's motion -

A: velocity remain constant in its orbit.
B: angular velocity remain constant
C: total angular momentum remain constant
D: radius of orbit remain constant.

Answer

Total angular velocity remain constant.

Q.28 An artificial satellite revolving around earth in a circular orbit. Its

A: linear velocity is constant
B: acceleration is constant
C: acceleration is changing
D: angular velocity constant

Answer

acceleration is changing.

Q.29 What is the value of gravitational acceleration inside the earth?

A: 9.8 $m\text{-}s^2$
B: Infinite
C: Zero
D: Can not be calculated

Answer

Zero

Q.30 In case of free fall the gravitational acceleration on a spherical object depends on__

A: The mass of the object
B: The radius of the object
C: The density of the object
D: None of the above

Answer

None of the above