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Physics Science Questions for SSC (CGL Tier-1 & 10+2), Railways and CDS Exams

Physics Quiz 19

Directions: Study the following question carefully and choose the right answer.

1. What would happen to the weight of a body in a lift moving upward with uniform speed?

- A. Apparent weight is more than the true weight
- B. Apparent weight is less than the true weight
- C. Apparent weight is equal to the true weight
- D. Apparent weight becomes Zero in such situation
- E. Apparent weight would be double the true weight

2. What is the S.I. unit of pressure?

- A. Pascal
- B. Newton
- C. Watt
- D. Candela
- E. Lux

3. What is the range of wavelength of electromagnetic spectrum between which light lies?

- A. $3500 \text{ \AA} \text{ to } 7500 \text{ \AA}$
- B. $3500 \text{ \AA} \text{ to } 5000 \text{ \AA}$
- C. $3900 \text{ \AA} \text{ to } 7800 \text{ \AA}$
- D. $3200 \text{ \AA} \text{ to } 7800 \text{ \AA}$
- E. $3100 \text{ \AA} \text{ to } 7100 \text{ \AA}$

4. The force of attraction or repulsion between two point charges at rest is directly proportional to the product of magnitude of the charges and inversely proportional to the square of the distance between them. Which of the following law implies the statement presented here?

- A. Ohm's Law
- B. Soddy-Fajan Law
- C. Plank's Law
- D. Coulomb's Law
- E. Newland's Law

5. Which of the following force holds protons and neutrons inside the nucleus of an atom?

- A. Gravitational force
- B. Electromagnetic force
- C. Strong nuclear force

D. Weak nuclear force E. None of the above

6. Why do stars twinkle in the sky?

A. Distance between stars and earth

B. Reflection of light C. Diffractions of light D. Refraction of light

E. Stars emit light not continuously but periodically

7. Why does temperature decrease with the increase in height from the Earth's surface?

A. Atmosphere can be heated only upwards from the earth's surface

B. The air is less dense in the upper atmosphere

C. There is more moisture in the upper atmosphere with cooling effect

D. Both a and c

E. Both a and b

8. The mass of a body on earth is 10 Kg, acceleration due to gravity, g_e is 10 m/s^2 . If acceleration due to gravity on the moon is g_m 6 m/s^2 , then the mass of the body on moon will be?

A. 6 Kg B. 60 Kg C. 10 Kg D. $10/6$ Kg E. $6/10$ Kg

9. Which of the following is not a subatomic particle?

A. Deuteron B. Positron C. Neutrino D. Pi-meson E. Photon

10. What does Galvanometer do?

A. Measures depth of ocean B. Measures sound under water C. Measures electric current

D. Measures electrical power E. Compares magnetic movements and fields

Correct Answers:

1	2	3	4	5	6	7	8	9	10
C	A	C	D	C	D	D	C	A	C

Explanations:

1.

Weight of a body depends on the force of gravity acting upon it. In a lift stationary or moving with uniform speed (not with acceleration) the apparent weight of body is equal to its true weight. Because here the weight will be calculated as.

$m\{g-(a)\}$, where m is the mass of body g is the acceleration produced due to force of gravity which is 9.8m/s^2 and a would be the acceleration due to the movement of lift. With uniform speed movement, the acceleration due to lift would be 0 here.

Hence, option C is correct.

2.

Pressure is defined as force acting on unit area of the surface.

Pressure (P) = Normal force on surface (F)/ Area of the surface (A)

Hence the S.I. unit of pressure is N/m^2 also called Pascal.

Hence, option A is correct.

3.

Light is a form of energy which is propagated as electromagnetic waves. In the spectrum of electromagnetic waves it lies between ultra-violet and infra-red region and has wavelength between 3900 \AA to 7800 \AA .

Hence, option C is correct.

4.

Charge is the basic property associated with matter due to which it produces and experiences electrical and magnetic effects. Coulomb's Law is an important concept in static electricity.

According to it , the force of attraction or repulsion between two point charges at rest is directly proportional to the product of magnitude of the charges and inversely proportional to the square of the distance between them. Also this force acts on the line joining the two charges.

Hence, option D is correct.

5.

The known forces of nature can be divided into four- gravity, electromagnetism, weak nuclear force and strong nuclear force. It is the strong nuclear force which holds protons and neutrons together inside an atom. Whereas weak nuclear force is responsible for the existence and structure of nuclei including radioactivity and nuclear fusion.

Hence, option C is correct.

6.

It is an example of optical illusion. They appear to twinkle, because light from the stars has to cross several layers of atmosphere with differing refractive indices to reach earth. As the atmospheric conditions in the different layers keep changing, the stars also appear to fade and shine at different times.

Hence, option D is correct.

7.

It is the territorial radiations which causes heating of atmosphere, hence it is heated upwards only from the earth's surface. The density of air also decreases as we go upwards due to low pressure. Hence , the temperature decreases but the moisture decreases.

Hence, option D is correct.

8.

Mass of a body is independent from the force of gravity. It is the weight which changes with the force of gravity and acceleration due to it. Hence, the mass of body will remain same on moon as on earth.

Hence, option C is correct.

9.

Atom is the smallest part of the matter. It consists of three fundamental particles electron , proton and neutron. However, several subatomic particles have also been discovered by scientists. These are Positron, Neutrino, Pi-meson, Photon etc.

Hence, option A is correct.

10.

A galvanometer is an electromechanical instrument used for detecting and indicating electric current. The galvanometer is mainly used in the bridges and potentiometer where they indicate the null deflection or zero current.

Hence, option C is correct.



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