Physics Questions for CDS, CGL Tier 1 & 10+2 Exams

Physics Quiz 5

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

1. Which among the following waves is used for communication by artificial satellites?

A. Micro Waves B. Radio Waves C. A. M. D. Frequency of 1016 series

2. Which among the following types of coal produces most heat per unit?

A. Coal B. Lignite C. Anthracite D. Pit

3. Who among the following developed the technology of underground nuclear explosion?

A. Dr. Homi J. Bhabha B. Dr. Vikram Sarabhai C. Dr. Raja Ramanna

D. Dr. P. K. Iyengar

4. For which Diode is used?

A. Modulation B. Oscillation C. Amplification D. Purification

5. When you pull out the plug connected to an electrical appliance, you often observe a spark. To which property of the appliance is this related?

A. Resistance B. Inductance C. Capacitance D. Wattage

6. The focal length of convex lens is

A. The same for all colours

B. Shorter for blue light than for red

C. Shorter for red light than for blue

D. Maximum for yellow light

7. If the door of a running refrigerator in a closed room is kept open, what will be the net effect on the room?

A. It will cool the room

B. It will heat the room

C. It will make no difference on the average

D. It will make the temperature go up and down

8. When a ball drops into the floor it bounces. Why does it bounce?

A. Newton's third law implies that for every action (drop) there is a reaction (bounce)

B. The floor exerts a force on the ball during the impact

C. The floor is perfectly rigid

D. The floor heats up on impact

9. A boy has a mass of 6 kg on the Earth; when measured on the Moon, its mass would be

A. Nearly 1 kg B. Less than 1 kg C. Less than 6 kg D. 6 kg

10. Transformer is a kind of appliance that can

1. Increase power

2. Increase voltage

3. Decrease voltage

4. Measure current and voltage

Select the correct answer using the codes given below

A. Only 4 B. 1 and 4 C. 2 and 3 D. 2, 3 and 4

Correct Answers:

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

Explanations:

1.

For fixed (point to point) services, communications satellites provide a microwave radio relay technology complementary to that of communication cables. They are also used for mobile applications such as communication to ships, vehicles, planes and handheld terminals, and for TV and radio broadcasting. Microwave technology is extensively used for point to point telecommunications (i.e. non broadcast uses). Microwaves are especially suitable for this use since they are more easily focused into narrow beams than radio waves, and also their comparatively higher frequencies allow broad bandwidth and high data flow.

2.

The heat content of anthracite ranges from 22 to 28 million Btu per short ton (26 to 33 MJ/kg) on a moist, mineral matter free basis. It is compact variety of coal that has a high luster. It has the highest carbon content of all type of coals, which also include bituminous coal and lignite. It is the most metamorphosed type of coal (but still represents low grade metamorphism). In which the carbon content is between 92.1 percent and 98 percent.

3.

Homi Jehangir Bhabha was an Indian nuclear physicist, founding director and professor of physics at the Tata Institute of Fundamental Research. Colloquially, known as father of India nuclear programme, Bhabha gained international prominence after deriving a correct expenssion for the probability of scattering positrons by electrons. His major contribution included his work on Compton scattering, R-process, and furthermore the advancement of nuclear physics. He was awarded with Padma Bhushan by Government of India in 1954.

4.

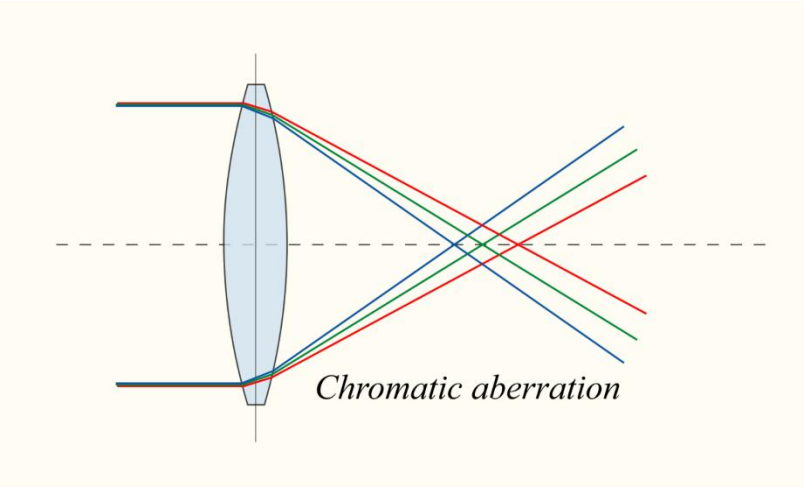
The Most common function of a diode is to allow an electric current to pass in one direction (called diode's forward direction), while blocking current in the opposite direction (the reverse direction). This unidirectional behavior is called rectification or verification and is used to convert alternating current to direct current, including extraction of modulation from radio signals in radio receivers – these diode are forms of rectifiers diode is a two thermal electronic component with an asymmetric transfer characteristic, with low (ideally zero) resistance to current flow in one direction, and high (ideally infinite) resistance in other.

5.

When we pull out the plug connected to an electrical appliance, a spark is observed oftenly due to resistance offered by the appliance. As the plug is pulled out, the value of resistance in the circuit decreases and hence more current tries to flow through the circuit. Pulling out the plug breaks the circuit and to complete the circuit for the flow of electricity a spark is observed.

6.

The waves of different wavelengths are refracted by different amounts in the same material. The blue light have shorter wavelength in comparison to red light hence, it bents more than the red light, As a result the focal length of a convex lens is shorter for blue light than for red.



7.

If the door of a running refrigerator in a closed room is kept open, then it will heat the room because the heat removed from the inside is released into the room, counter acting any cooling, plus the energy that is used to operate the compressor eventually winds up being heat, therefore increasing the room temperature.

8.

When a ball drops on to the floor, during impact the floor exerts an impulsive force on the ball. This impulse given to the ball is equal to the change in momentum of the ball.

9.

Mass is a measurement of the amount of matter something contains. Mass of an object does not change when an objects location changes. So, the mass of the body on moon would be same as that on earth.

10.

There are two types of transformer, step-up and step-down transformers. In step-up transformer voltage goes up but current goes down, so power stays the same. Also in step-down transformer voltage goes down but current goes up, so, again power stays same. Therefore, transformer is an appliance that can increase or decrease voltage.