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

Physics Quiz 1

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

1. In the absence of the earth's atmosphere, sky would appear:

A. blue B. deep red C. white D. black

2. Ozone saves the biosphere by absorbing high energy radiations called _____.

A. Infra-red (IR) B. Gamma rays C. Ultraviolet rays (UV) D. X-rays

3. Purpose of an optical filter is to _____.

A. reflect lights of different colours

B. dispense light into component colours

C. refract light of different colours

D. transmit or absorb light of different colours

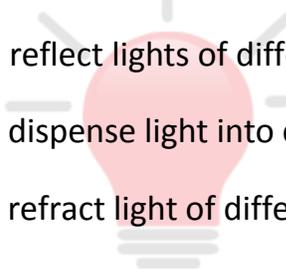
4. In step-down transformer, the AC output gives the

A. Current more than the input current

B. Current less than the input current

C. Current equal to the input current

D. Voltage more than the input voltage



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5. Statement I Pulling a lawn roller is easier than pushing it.

Statement II Pushing increases the apparent weight and hence the force of friction.

Which of the following options follows given statements?

- A. Both the statements are true and statement II is the correct explanation of statement I
- B. Both the statements are true, but statement II is not the correct explanation of statement I
- C. Statement I is true, but statement II is false
- D. Statement I is false, but statement II is true

6. It is difficult to cut things with a blunt knife because

- A. The pressure exerted by knife for a given force increases with increase in bluntness
- B. A sharp edge decreases the pressure exerted by knife for a given force
- C. A blunt knife decreases the pressure for a given force
- D. A blunt knife decreases the area of intersection

7. When deep sea fishes are brought to the surface of the sea, their bodies burst. This is because the blood in their bodies flows at very

- A. High speed
- B. High pressure
- C. Low speed
- D. Low pressure

8. A bus travels at a speed of 50 km/h to go from its origin to its destination at a distance of 300 km and travels at a speed of 60 km/h to return to the origin. What is the average speed of the bus?

- A. 54.55 km/h
- B. 55 km/h
- C. 55.55 km/h
- D. 54 km/h

9. A device, which is used in our TV set, computer, radio set for storing the electric charge, is

A. Resistor B. Inductor C. Capacitor D. Conductor

10. Which type/types of pen uses/use capillary action in addition to gravity for flow of ink?

A. Fountain pen B. Ballpoint pen C. Gel pens D. Both ballpoint and gel pens



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Correct Answers:

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

Explanations:

1.

In the absence of atmosphere, the sky will look **black**. If there is no atmosphere, there won't be any atmospheric refraction to scatter the light. This causes the sky to appear black.

2.

Ozone saves the biosphere by absorbing high energy radiations called **Ultraviolet rays (UV)**.

The ozone layer acts as a filter for the shorter wavelength and highly hazardous ultraviolet radiation (UVR) from the sun, protecting life on Earth from its potentially harmful effects.

3.

The purpose of an optical filter is to transmit or absorb light of different colours.

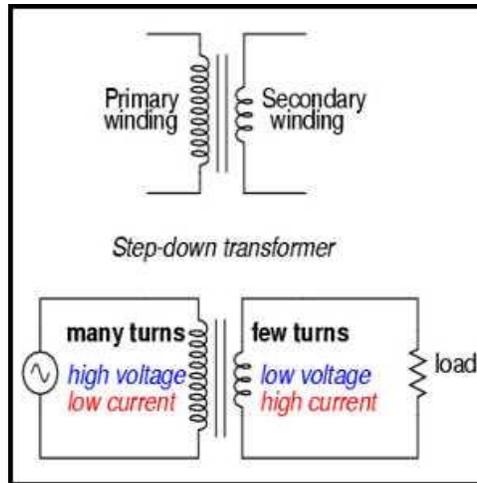
Optical filters are devices that selectively transmit light of different wavelengths, usually implemented as plane glass or plastic devices in the optical path which are either dyed in the bulk or have interference coatings. The optical properties of filters are completely described by their frequency response, which specifies how the magnitude and phase of each frequency component of an incoming signal is modified by the filter.

For more information kindly visit given link:

https://en.wikipedia.org/wiki/Optical_filter

4.

In step-down transformer, the AC output gives the current more than the input current.



5.

It is easier to move anybody by pulling in than by pushing it. A body starts to move when the applied force is more than the frictional force. This frictional force is proportional to the weight of the body under which it acts. When the lawn roller is pushed by the force (F), the vertical component of the pushing force now increases the weight ($w=mg$) of the roller which intern results in increase of normal reaction [$R=m + F \sin$] and hence the friction is more.

6.

It is difficult to cut things with a blunt knife because a blunt knife decreases the pressure for a given force.

7.

When deep-sea fishes are brought to the surface of the sea, their bodies burst, this is because the blood in their bodies flows at very high speed.

8.

Let $S_1 = 50\text{km/hr}$

$S_2 = 60\text{km/hr}$

Therefore, Average speed = $(2 \cdot S_1 \cdot S_2) / (S_1 + S_2)$

$$= 54.55 \text{ km/h}$$

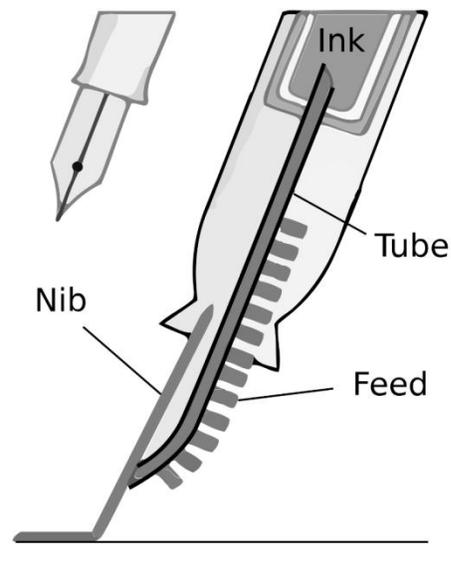
9.

Capacitor (condenser) is a passive two-terminal electrical component used to store energy in an electric field. It is used in many electronics application such as TV set, computer and radio etc for storing the electric charge. An ideal capacitor is wholly characterized by a constant capacitance (C), defined as the ratio of charge Q on each conductor to the voltage V between them.

The SI unit of capacitance (C) is Farad (F).

10.

Fountain pen uses capillary action in addition to gravity for flow of ink.





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