

## Sample Questions APPLIED SCIENCE (22202)

(For Term End Online Examination, there will be 25 (15 x 1Mark questions + 10 x 2Marks questions = 35 Marks) questions each on Physics and Chemistry.)

### Topic 1

1) Question: - After testing the material using destructive technique, the material \_\_\_\_\_

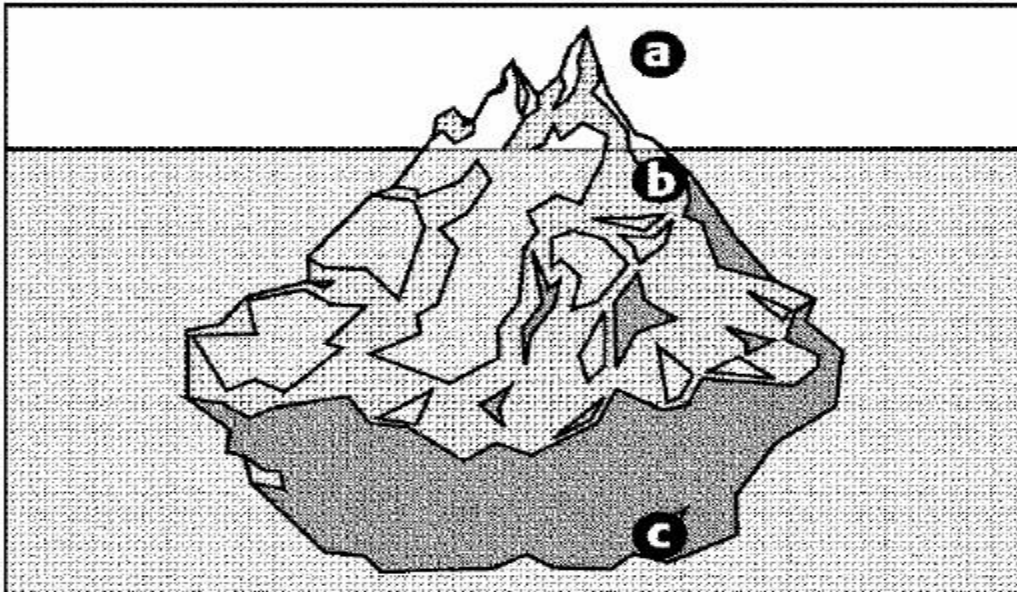
Option A: - can be used for intended purpose

Option B: - can be used for intended purpose after some correction

Option C: - cannot be used for intended purpose

Option D: - none of above

2) Question: - At which point of the iceberg, (a, b, or c) is the water pressure the greatest?



Option A: - a

Option B: - b

Option C: - c

Option D: - water pressure is same at all points a, b,c

3) Question: - Identify the correct statement from the following.

Option A: - If restoring force is more, elasticity of the material is more

Option B: - There is no relation between restoring force and elasticity of the material

Option C: - If restoring force is less, elasticity of the material is more

Option D: - If restoring force is more, elasticity of the material is less

4) Question: - The viscous force between the adjacent liquid layers is inversely proportional to the\_\_\_\_\_.

Option A: - Area of contact of two adjacent layers

Option B: - Distance between two adjacent layers

Option C: - Velocity difference between two adjacent layers

Option D: - None of the above

5) Question: - The weight of a person in air is 69kg, but weight of the same person in water may be 49kg, i.e. there is loss of weight due to \_\_\_\_\_ force.

Option A: - viscous

Option B: - gravitational

Option C: - buoyancy

Option D: - none of the above

6) Question: - Which of the following statement is true for viscosity of liquids?

Option A: - Viscosity increases with the increase in temperature

Option B: - Viscosity increases with the decrease in temperature

Option C: - Viscosity decreases with the increase in temperature

Option D: - Viscosity decreases with the decrease in temperature

## Topic 2

7) Question: - A train crosses a tunnel in 25 seconds. At the entry of the tunnel, its velocity is 54 km/hr and at the exit of the tunnel, the velocity is 72 km/hr. Then the length of the tunnel is

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Option A: - 237.5 m

Option B: - 337.5 m

Option C: - 437.5 m

Option D: - 537.5 m

8) Question: - A Car of mass 1500 Kg is moving with a Velocity 45km/hr find the momentum of car.

Option A: - 67500 kg-m/s

Option B: - 18750 kg-m/s

Option C: - 30 kg-m/s

Option D: - 41650 kg-m/s

9) Question: - One Watt = \_\_\_\_\_

Option A: - 1 J/s

Option B: -  $10^7$  erg/S

Option C: -  $10^5$  dyne

Option D: - both (a) and (b)

10) Question: - An aeroplane is moving horizontally with a velocity  $u$ . It drops a packet when it is at height  $h$ . The time taken by the packet in reaching the ground will be \_\_\_\_\_

Option A: -  $\sqrt{\frac{2h}{g}}$

Option B: -  $\sqrt{\frac{2u}{g}}$

Option C: -  $f \sqrt{\frac{h}{2g}}$

Option D: -  $\sqrt{\frac{2g}{h}}$

11) Question: - A point mass is projected making an acute angle with the horizontal. If angle between velocity ' $v$ ' and acceleration ' $a$ ' or its path is  $\Theta$  then \_\_\_\_\_

Option A: -  $\Theta = 0^\circ$

Option B: -  $\Theta = 90^\circ$

Option C: -  $90^\circ < \Theta < 0^\circ$

Option D: -  $0^\circ < \Theta < 90^\circ$

12) Question: - A stone is released from the window of a moving train. The path of the particle as observed by a person on the ground is \_\_\_\_\_

Option A: - straight line

Option B: - circular

Option C: - elliptical

Option D: - parabolic

## Topic 3

13) Question: - The ratio of photon energy to its frequency is \_\_\_\_\_

Option A: - its speed

Option B: - its velocity

Option C: - its wavelength

Option D: - plancks constant

14) Question: - The work function of a substance is 1.6 eV. Find the longest wavelength of light that can produce photoemission from the substance.

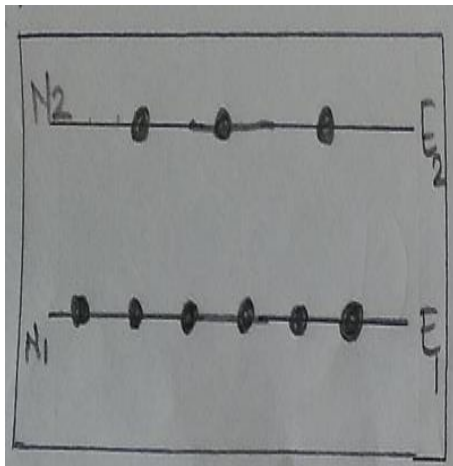
Option A: - 2900 Å

Option B: - 3867 Å

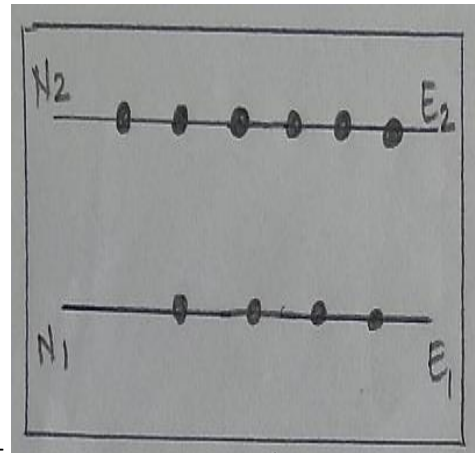
Option C: - 5800 Å

Option D: - 7734 Å

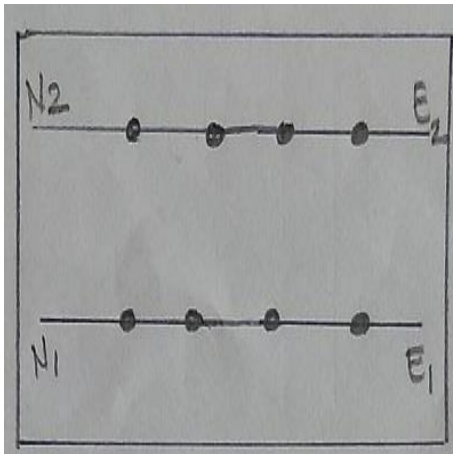
15) Question: - Out of the following which diagram explains population inversion \_\_\_\_\_



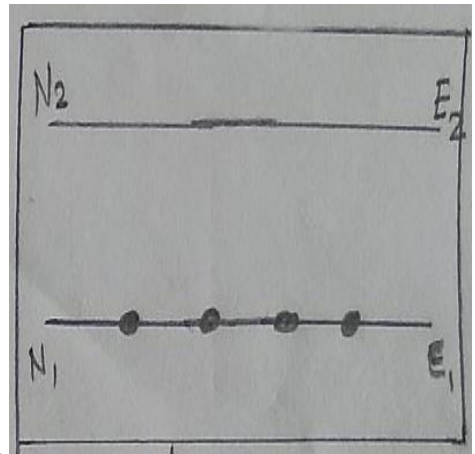
Option A: -



Option B: -



Option C: -



Option D: -

16) Question: - LASER light is coherent \_\_\_\_\_

Option A: - All the waves have same frequency      Option B: - All the waves are exactly in the same phase

Option C: - All the waves have same wavelength      Option D: - All the waves are exactly in the opposite phase

17) Question: - In He-Ne LASER, the tube is filled with \_\_\_\_\_

Option A: - 10 % He and 90 % Ne

Option B: - 20 % He and 80 % Ne

Option C: - 90 % He and 10 % Ne

Option D: - 80 % He and 20 % Ne

18) Question: - The conductivity of LDR increases as

Option A: - intensity of light increases

Option B: - intensity of light decrease

Option C: - wavelength of light increases

Option D: - None of the above

## Topic 4

19) Question: - A property of metal by virtue of which it can resist wear, penetration and scratching by other materials is known as its \_\_\_\_\_

Option A: - Machinability

Option B: - Toughness

Option C: - Tensile strength

Option D: - Hardness

20) Question: - An alloy used in making parts of aeroplane is.....

Option A: - Brass

Option B: - Duralumin

Option C: - stainless steel

Option D: - Gun metal

21) Question: - Chemical formula of copper pyrite ore is \_\_\_\_\_

Option A: -  $\text{Cu}_2\text{O}$

Option B: -  $\text{Cu}_2\text{S}$

Option C: -  $\text{CuFeS}_2$

Option D: -  $\text{CuCO}_3$

22) Question: - Purification of blister copper is done by \_\_\_\_\_ method.

Option A: - Liquation

Option B: - Electrorefining

Option C: - Distillation

Option D: - Poling

23) Question: - The composition of Duralumin is...

Option A: - Al=95% , Cu=4%, Mg= 0.5%, Mn= 0.5 %

Option B: - Al=95% , Pb=4%, Mg= 0.5%, Mn= 0.5 %

Option C: - Al=95% , Sn=4%, Mg= 0.5%, Mn= 0.5 %

Option D: - Al=95% , Fe=4%, Mg= 0.5%, Mn= 0.5 %

## Topic 5

24) Question: - By using hard water, the Caustic embrittlement in boilers take place mainly due to the formation of \_\_\_\_\_

Option A: -  $\text{H}_2\text{SO}_4$

Option B: - NaOH

Option C: - HCl

Option D: -  $\text{NH}_4\text{OH}$

25) Question: - The substance that can be used as a coagulating agent in water treatment \_\_\_\_\_

Option A: - Copper sulphate

Option B: - calcium sulphate

Option C: - Ferrous sulphate

Option D: - Magnesium sulphate

26) Question: - During "COD test" of sewage, organic matter is oxidized by \_\_\_\_\_

Option A: - potassium dichromate

Option B: - Sodium chloride

Option C: - Hydrochloric Acid

Option D: - calcium carbonate

27) Question: - In the ion exchange process, exhausted cation ex-changer are regenerated by using \_\_\_\_\_

Option A: - Brine solution

Option B: - Neutral solution

Option C: - Acidic solution

Option D: - Alkaline solution

28) Question: - "The reversal of solvent flow from higher concentration to lower concentration solution through semipermeable membrane" is the main principle of \_\_\_\_\_

Option A: - Ion exchange

Option B: - Soda lime

Option C: - Zeolite process

Option D: - Reverse osmosis process

## Topic 6

29) Question: - Combustion reaction of the fuel is \_\_\_\_\_ reaction.

Option A: - Exothermic

Option B: - Endothermic

Option C: - Catalytic

Option D: - redox

30) Question: - \_\_\_\_\_ containing coal is not suitable for the preparation of metallurgical coke.

Option A: - sulphur

Option B: - Nitrogen

Option C: - oxygen

Option D: - Hydrogen

31) Question: - The fraction of petroleum used for preparing candles and boot polish is \_\_\_\_\_.

Option A: - Paraffin wax

Option B: - wax oil

Option C: - petrol

Option D: - castor oil

32) Question: - When a gaseous fuel is completely burned in presence of oxygen the product obtained, along with heat is \_\_\_\_\_

Option A: - Carbon dioxide & water

Option B: - Carbon monoxide & water

Option C: - Carbon particles & water

Option D: - Carbon dioxide & Carbon monoxide

33) Question: - Molecular Weight of Carbon dioxide is equal to \_\_\_\_\_

Option A: - 44

Option B: - 40

Option C: - 50

Option D: - 45