



CAPF AC PYQ

(SUBJECT WISE)

(Institute for Defence exam)

SUBJECT : SCIENCE

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1. Which one of the following statements for an object falling freely under the influence of gravity is correct ?

- (a) Zero acceleration always implies zero velocity
- (b) Zero acceleration has no relation with the velocity of the object
- (c) Zero velocity at any instant necessarily means zero acceleration at that instant
- (d) Acceleration is constant all throughout the free fall

2. Two magnetic field lines produced by the same source

- (a) never intersect
- (b) can originate from same point
- (c) can terminate at same point
- (d) can intersect depending on situation

3. Which one of the following statements regarding Fleming's Rule is correct ?

- (a) Fleming's left hand rule gives direction of force on a current-carrying conductor in a magnetic field
- (b) Fleming's right hand rule gives direction of force on a current-carrying conductor in a magnetic field
- (c) Both the left-hand and right-hand rule can be used for finding direction of force on a current-carrying conductor in a magnetic field
- (d) Fleming's rules has nothing to do with magnetic field

4. Which one of the following statements regarding motion is correct ?

- (a) All the periodic motions are necessarily simple harmonic
- (b) All the simple harmonic motions are necessarily periodic motions
- (c) There is no co-relation between the simple harmonic motions and the periodicity of motion
- (d) The relation between the simple harmonic motion and periodic motion depends upon the mass of object undergoing the motion

5. The radar used by police to check over-speeding vehicles works on the principle of

- (a) Raman effect
- (b) Induction effect
- (c) Doppler effect
- (d) Coulomb effect



6. Which one of the following statements with regard to Newton's third law of motion is NOT correct ?

- (a) Force never occurs singly in nature
- (b) When the earth pulls a stone downwards due to gravity, the stone exerts a force on the earth
- (c) There is a cause-effect relation implied in the third law
- (d) There is no cause-effect relation implied in the third law

7. Magnesium is used in

- (a) fireworks to make a bright white light
- (b) gemstones in jewellery
- (c) examination of alimentary canal of the patient
- (d) purification of water

8. Which one of the following ingredients does NOT constitute paint ?

- (a) Turpentine oil (thinner)
- (b) Poly-hydroxy phenols (anti-skinning agent)
- (c) Thiourea (accelerator)
- (d) Titanium dioxide (pigment)

9. Which one of the following statements about alkaline earth metals is NOT true ?

- (a) Strontium salts burn with a red flame
- (b) Barium metal is used in medicine to examine the alimentary canal of a patient by X-ray
- (c) Green plants need magnesium in order to make the chlorophyll that trap the energy from sunlight in photosynthesis
- (d) Red colour of gemstone Ruby is due to the element beryllium present in it

10. Which one of the following gases produces a red light when electricity flows through it ?

- (a) Helium
- (b) Argon
- (c) Nitrogen
- (d) Neon



11. Which one of the following methods can be used to remove permanent hardness of water ?

- (a) Boiling
- (b) Ion-exchange
- (c) Lime treatment
- (d) Bubbling sulphur dioxide gas

12. Which one of the following is NOT a component of photochemical smog ?

- (a) Ozone
- (b) Peroxyacetyl nitrate
- (c) Polyaromatic hydrocarbons
- (d) Nitric oxide

13. The eukaryotic chromatin is composed of

- (a) DNA only
- (b) DNA and Protein
- (c) DNA and RNA
- (d) RNA and Protein



14. In which of the following phylum, would you place an animal with a bilaterally symmetrical, triploblastic body without a true internal cavity (coelom) ?

- (a) Porifera
- (b) Platyhelminthes
- (c) Cnidaria
- (d) Annelida



15. During respiration in human beings, the actual place of gaseous exchange is

- (a) Bronchi
- (b) Nasal passage
- (c) Alveoli
- (d) Trachea

16. In human body, the hormone which is secreted into blood and which controls the rate of heart beat is

- (a) Adrenaline
- (b) Thyroxine
- (c) Insulin
- (d) Testosterone



17. In human beings, certain chemicals which cross the synapse between nerve cells are released from

- (a) cell body of nerve cell
- (b) nucleus of nerve cell
- (c) nerve endings of nerve cell
- (d) axon of nerve cell

18. Which one of the following is the major function of platelets ?

- (a) Clotting of blood
- (b) O₂ transport
- (c) Immunity
- (d) Phagocytosis

19. An electron and a photon have same de Broglie wavelength. It implies that they have the same

- (a) linear momentum
- (b) energy
- (c) speed
- (d) angular momentum

20. Oil and water do NOT mix because of the property of

- (a) bulk modulus
- (b) shear strain
- (c) volume effect
- (d) surface tension

21. At triple point the substance co-exists in

1. Liquid phase
2. Solid phase
3. Vapour phase

Select the correct answer using the code given below :

- (a) 1 only
- (b) 1 and 2 only
- (c) 2 and 3 only
- (d) 1, 2 and 3



22. Latent heat corresponds to the change in heat at constant

- (a) temperature only
- (b) volume only
- (c) pressure only
- (d) temperature, volume and pressure



23. Which one of the following statements on photoelectric effect is NOT correct ?

- (a) Albert Einstein received the Nobel Prize in Physics for explaining photoelectric effect
- (b) For each metal, there is a threshold frequency ν_0 below which this effect is not observed
- (c) At a frequency $\nu > \nu_0$, the kinetic energy of ejected electrons does not change on increasing the frequency of incident light
- (d) The number of electrons ejected is proportional to the intensity of incident light

24. Which one of the following is the average atomic mass of chlorine atom ?

- (a) 35.9 u
- (b) 35.5 u
- (c) 35.0 u
- (d) 37.0 u



25. Which one of the following is NOT a heterocyclic aromatic compound ?

- (a) Tropolone
- (b) Furan
- (c) Thiophene
- (d) Pyridine



26. Which one of the following minerals is NOT a naturally occurring silicate ?

- (a) Feldspar
- (b) Zeolite
- (c) Mica
- (d) Bauxite

27. In which part of the cell, the glucose is converted into pyruvate ?

- (a) Mitochondria
- (b) Nucleus
- (c) Cytoplasm
- (d) Endoplasmic reticulum



28. After fertilization, the ovule and ovary subsequently develop to form

- (a) seed and fruit respectively
- (b) fruit and seed respectively
- (c) seed and flower respectively
- (d) degenerated ovule and seedless fruit respectively

29. Which one of the following statements is correct ?

- (a) Glucose breaks down to CO_2 , H_2O and energy in all organisms
- (b) Glucose breaks down into ethanol, CO_2 and energy in our muscle cells
- (c) Glucose breaks down into CO_2 , H_2O and energy in all aerobic tissues
- (d) Glucose breaks down into lactate and energy in yeast

30. Growing two or more crops in the same field but in different rows is called

- (a) Crop rotation
- (b) Inter cropping
- (c) Alternate cropping
- (d) Kharif cropping



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