



CAPF AC PYQ

(SUBJECT WISE)

(Institute for Defence exam)

SUBJECT : SCIENCE

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3. Which one among the following has largest energy per photon ?

- (a) X-ray
- (b) Ultra-violet ray
- (c) Visible-ray
- (d) Infra-red ray



4. In Sun-Earth system, the distance between Lagrange points L2 and L3 is about

- (a) 15 lakh kilometre
- (b) 30 lakh kilometre
- (c) 16 crore kilometre
- (d) 32 crore kilometre

6. A canon shoots a ball upwards with an initial speed of 100 m/s. The total time of flight of the ball is 20 s before it hits the ground. The ball loses 70% of its speed after hitting the ground. Which among the following is the correct height that the ball will bounce up after its first bounce ? ($g = 10 \text{ m/s}^2$)

- (a) 100 m
- (b) 70 m
- (c) 50 m
- (d) 45 m

12. The isotope of which one among the following elements is used in the treatment of cancer ?

- (a) Uranium
- (b) Cobalt
- (c) Iodine
- (d) Fluorine



8. Which one of the following heat transfer mechanism does NOT require a medium ?

- (a) Conduction
- (b) Convection
- (c) Radiation
- (d) Collision

10. Which one among the following does NOT have any linkage with the phenomenon of electromagnetic induction ?

- (a) Electric transformer
- (b) Induction cooker
- (c) Galvanometer
- (d) Electron microscope



11. Which one among the following statements about matter is NOT correct ?

- (a) On increasing the temperature of solids, the kinetic energy of particles increases
- (b) The maximum temperature at which a solid melts to become a liquid at atmospheric pressure is called its melting point
- (c) Particles of steam have more energy than water at 100°C
- (d) Direct change of gas to solid is called deposition

13. Water is a good solvent for dissolving ionic compounds because

- (a) It has a high specific heat
- (b) It has no colour
- (c) It has a high dipole moment
- (d) It has a high boiling point

14. Which among the following is correct with respect to bond formation in an ethyne molecule ?

- (a) Carbon-Carbon single bond
- (b) Carbon-Carbon double bond
- (c) Carbon-Carbon triple bond
- (d) Carbon-Hydrogen double bond

15. Which among the following are the main ingredients for manufacturing of glass ?

- (a) Silica, sodium carbonate, borax, alumina and cullets
- (b) Iron oxide, lead, sodium bicarbonate, alumina and cullets

(c) Magnesium carbonate, alumina, silica and cullets

(d) Iron oxide, sodium, alumina, silica and cullets

23. In which layer of the plant tissue Guard cells are present ?

- (a) Palisade mesophyll
- (b) Spongy mesophyll
- (c) Epidermis
- (d) Xylem

16. Which one among the following statements with respect to the atomic number of an atom is correct ?

- (a) The number of neutrons is same as atomic number
- (b) The sum of electrons and neutrons is same as atomic number
- (c) The number of protons is same as atomic number
- (d) The sum of protons and neutrons is same as atomic number

17. Which one among the following is an example of endothermic process ?

- (a) Combustion of carbon
- (b) Mixing acid and alkali
- (c) Photosynthesis
- (d) Respiration

18. Which one among the following is used in the manufacture of ultra-violet protective glasses ?

- (a) Aluminium oxide
- (b) Tungsten oxide
- (c) Molybdenum oxide
- (d) Cerium oxide



22. In which organism did Gregor J. Mendel conduct the experiment to explain principles of inheritance ?

- (a) Groundnut
- (b) Garden Pea
- (c) Four O'clock plant
- (d) Fruit fly



19. Match List I with List II and select the correct answer using the code given below the Lists :

List I (Pigment in paint)	List II (Example)
A. Natural pigment	1. Chalk
B. Synthetic pigment	2. White lead
C. Reactive pigment	3. Red lead
D. Inert pigment	4. Titanium dioxide

Code :

	A	B	C	D
(a)	1	2	3	4
(b)	1	3	2	4
(c)	4	3	2	1
(d)	4	2	3	1

20. Match List I with List II and select the correct answer using the code given below the Lists :

List I (Element)	List II (Unpaired electron)
A. Boron	1. Zero
B. Nitrogen	2. Two
C. Oxygen	3. One
D. Neon	4. Three

Code :

	A	B	C	D
(a)	1	4	2	3
(b)	1	2	4	3
(c)	3	2	4	1
(d)	3	4	2	1

21. Which one among the following biotechnologies is applied to manufacture pharmaceutical products such as insulin, antibiotics and vaccines ?

- (a) White Biotechnology
- (b) Red Biotechnology
- (c) Green Biotechnology
- (d) Blue Biotechnology

24. Identify the correct option from the following about the proportion of different gases in Biogas ?

- (a) Methane > Carbon dioxide > Nitrogen
- (b) Methane > Nitrogen > Carbon dioxide
- (c) Methane > Oxygen > Carbon monoxide
- (d) Nitrogen > Methane > Carbon dioxide

25. Which one of the following is the audible range of hearing for humans ?

- (a) 20 kHz – 200 kHz
- (b) 20 Hz – 20 kHz
- (c) 20 Hz – 35 kHz
- (d) 20 Hz – 40 kHz

26. In what form excess of glucose is stored in human body ?

- (a) Fructose
- (b) Glycogen
- (c) Glucose
- (d) Starch



27. Biotechnological research is promoted through the development of "Bio-technology Parks". Which of the following is/are essential to bring technology to market ?

1. Development of new product
2. Entrepreneurship
3. Technology incubation

Select the answer using the code given below :

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



28. Which one of the following is the correct chronology of invention/discovery in the field of Bio-technology ?

- (a) Discovery of Plasmid, Double Helical structure of DNA, DNA fingerprinting, cloning of Dolly

- (b) Double Helical structure of DNA, Discovery of Plasmid, DNA fingerprinting, cloning of Dolly

- (c) DNA fingerprinting, cloning of Dolly, Double Helical structure of DNA, Discovery of Plasmid

- (d) Double Helical structure of DNA, DNA fingerprinting, Discovery of Plasmid, cloning of Dolly

30. Which one of the following structure is NOT found in prokaryotes ?

- (a) Nuclear envelope
- (b) Cell membrane
- (c) Ribosome
- (d) Cell wall

