

## General Sciences

1. Sugar syrup is used for the preservation of fruits because it
  - A. mixes well with the fruits
  - B. kills the micro-organisms present in them
  - C. drains moisture to inhibit growth of micro-organisms
  - D. helps to improve their taste and flavor
2. Without burning paper, water can be boiled in a paper cup because
  - A. water is a good conductor of heat with high specific heat
  - B. paper is a bad conductor of heat
  - C. ignition temperature of paper is more than boiling point of water.
  - D. heat capacity of paper is less than that of water.
3. If you float on your back, on water, your weight will be
  - A. less than the weight of water displaced by you
  - B. Zero
  - C. half of your normal weight
  - D. equal to your normal weight)
4. The ozone layer in the upper part of the atmosphere protects us from
  - A. visible radiations
  - B. infra- red rays
  - C. ultraviolet radiations
  - D. cosmic rays
5. Which of the following contains cobalt?
  - A. Vitamin B12
  - B. Vitamin K
  - C. Chlorophyll
  - D. Hemoglobin
6. A person feels difficulty in breathing on entering into an underground storage of wheat grains. This is likely due to the increased concentration of
 

A. Moisture	C. Co2
B. N2	D. floating dust particles
7. Which of the following is source of a non-conventional energy?
 

A. Coal	C. Biogas
B. Oil	D. None of these
8. Which of the following is a correct description of the use of Tetracycline?
  - A. It is a pest killer.
  - B. It is a preservative.
  - C. It is used for air purification.
  - D. It is known as anti-plague drug
9. White coal is
 

A. Uranium	C. Hydro-electricity
B. Ice	D. diamond
10. Sun's heat reaches earth by which of the following modes of heat transmission?
 

A. Conduction	C. Radiation
B. Convection	D. Heat exchange
11. A healthy man consumes maximum calories while playing
 

A. Golf	C. Football
B. table tennis	D. billiards
12. A substance which can act both as an acid and a base is known as
 

A. Amorphous	C. Amphoteric
B. Allotropic	D. None of these
13. Under similar conditions of pressure and temperature, the density of humid air is
  - A. less than that of dry air
  - B. more than that of dry air
  - C. equal to that of dry air
  - D. more than or less than that of dry air depending on temperature
14. Which of the following statements regarding cellulose are correct?
  1. It is a naturally occurring organic substance found in plants.
  2. It is used for making rayon.
  3. It consists of long unbranched chain of glucose units.

A. 1 and 2	C. 1 and 3
B. 2 and 3	D. 1, 2 and 3
15. The minimum possible temperature beyond which matter cannot be cooled is
 

A. - 98.5	C. - 273 °C
B. -100°C	D. - 4695°C
16. Rennin and lactase, the enzymes required to digest milk, disappear in the human body by the age of
 

A. Two	B. Three	C. Five	D. eight
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RECRUITMENT ASSESSMENT TEST



17. Which of the following is a correct description of 'tissue culture'?

- A. Conservation of forests and plantation
- B. Growth and propagation of horticultural crops
- C. Science of cultivating animal tissue in artificial medium
- D. Protection of wild animals

18. The chief ingredient of the mosquito repellent cream is derived from

- A. Lemon
- B. Tulsi
- C. Neem
- D. Rice bran

18. Fertility of soil can be improved by

- A. adding dead earthworms
- B. removing dead earthworms
- C. adding living earthworms
- D. removing living earthworms and adding dead earthworms

19. Ozone attacks

- A. Glass
- B. mercury and silver
- C. copper
- D. None of these silver and iron

20. Which of the following are pollutants that a traffic constable is likely to inhale?

- 1. Carbon monoxide
  - 2. Lead
  - 3. Sulphur dioxide
  - 4. Oxides of nitrogen
- A. 1,2 and 3                      C. 1,3 and 4  
B. 1,2 and 4                      D. 2,3 and 4

21. Which of the following chemicals is most suitable to control insects on small scale?

- A. E.D.B.
- B. B.H.C
- C. Celphos
- D. Sevidol

22. Which of the following is most poisonous?

- A. Acetic acid
- B. Methyl alcohol
- C. Ethyl alcohol
- D. Potassium chloride

23. Which of the following when taken by pregnant women, is found to be the cause of deformed children?

- A. Glycerol
- B. Xylidine
- C. Thalidomide
- D. None of these

#### Life Sciences

24. Which of the following is not a bone in the human body?

- A. Sternum
- B. Humerus
- C. Pericardium
- D. Tibia

25. Duodenum is situated

- A. at the uppermost part of the small intestine
- B. near the lungs
- C. in the brain
- D. at the tail end of the intestine

26. The heart is covered by a membrane called

- A. Epidermis
- B. Dermis
- C. Epicardium
- D. Pericardium

27. Element that is not found in blood is

- A. Iron
- B. Copper
- C. Chromium
- D. magnesium

28. The gland, which in relation to body size is largest at birth and then gradually shrinks after puberty, is?

- A. Thyroid
- B. Pituitary
- C. Thymus
- D. Adrenal

29. Which of the following is not a bone in the legs of human body?

- A. Radius
- B. Tibia
- C. Femur
- D. Fibula

30. Bleeding from artery is characterised by which of the following?

- 1. Blood is red.
- 2. Blood is purple.
- 3. Bleeding is continuous.
- 4. Bleeding is intermittent.

- A. 1 and 3                      C. 1 and 4  
B. 2 and 3                      D. 2 and 4

31. Which of the following bone articulations forms the gliding joint?

- A. Humerus and radius
- B. Carpals
- C. Hip girdle and femur
- D. Skull & neck vertebrae

32. Pancreas secretes hormones which help in

- A. blood clotting
- B. production of antibodies
- C. growth of body
- D. keeping sugar balance in body

33. Oxygen is transported to every cell of the human body by?

- A. red blood cells
- B. blood platelets
- C. white blood cells
- D. hormones

34. If a person can see an object clearly when it is placed at distance of about 25 cm away from him, he is suffering from

- A. Myopia
- B. Hypermetropia
- C. astigmatism
- D. None of these



35. Consider the following statements regarding blood pressure:

1. It is the pressure exerted by the blood on the walls of any vessel.
2. It decreases in the arteries as the distance from the heart increases,
3. It is lower in the capillaries than in the arteries.
4. It is usually lower in women than in men.

Of these, the correct ones are:

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

36. What is the correct sequence of the following in heart attack?

1. Narrowing of the inner orifice of the vessel
2. 'Plaque' from fibrous tissue and high cholesterol
3. Inadequate supply of blood and oxygen
4. Clots of blood carried into the coronary arteries

- A. 1, 2, 3, 4                      C. 2, 3, 1, 4  
B. 2, 4, 1, 3                      D. 4, 2, 1, 3

37. Bile juice is secreted by

- A. Pancreas                      C. Spleen  
B. Liver                          D. Gall bladder

38. Veins differ from arteries in having

- A. thinner walls  
B. strong walls  
C. narrower lumen  
D. valves to control direction of flow

39. What is the main function of insulin in the human body?

- A. To maintain blood pressure  
B. To help in digestion of food  
C. To control the level of sugar in the body  
D. To check the level of iodine in the body

40. An enzyme that works in an acidic medium is

- A. Pepsin                          C. Ptyalin  
B. Trypsin                        D. maltose

41. The blood pressure is the pressure of blood in

- A. Arteries                        C. Auricles  
B. Veins                          D. ventricles

42. Which of the following components of blood protects human beings from infection?

- A. Plasma  
B. Blood Platelets  
C. Haemoglobin  
D. White Blood Corpuscles

43. The normal temperature of the human body is  
A. 90°F                      B. 98°F                      C. 98.4°F                      D. 96.4°F

44. In the case of a 'Test-tube baby'?

- A. fertilisation takes place inside the test tube.  
B. development of the baby takes place inside the test tube.  
C. fertilisation takes place outside the mother body.  
D. Unfertilised egg develops inside the test tube.

### Physics

45. An earth satellites S has an orbit radius which is 4 times that of communication satellite C. The period of revolution of S will be:

- A. 32 day                      B. 18 days                      C. 8 days                      D. 9 days

46. An object of mass 40 kg and having a velocity 4 m/s collides with another object ( $m = 60$  kg) having velocity 2 m/s. The collision is perfectly inelastic. The loss in energy is

- A. 110 J                      B. 48 J                      C. 392 J                      D. 440 J

47. An iron rod of length 2 m and area of cross-section  $50 \text{ mm}^2$  stretches by 0.5 mm, when a mass of 250 kg is hung from its lower end. The Young's modulus of iron rod is:

- A.  $19.6 \times 10^{20} \text{ N/m}^2$   
B.  $19.6 \times 10^{18} \text{ N/m}^2$   
C.  $19.6 \times 10^{15} \text{ N/m}^2$   
D.  $19.6 \times 10^{10} \text{ N/m}^2$

48.  $16 \text{ cm}^3$  of water flows per second through a capillary tube of radius  $a$  cm and of length  $l$  and when connected a pressure head of  $H$  cm of water. If a tube of same length and radius  $a/2$  cm is connected to the same pressure head the quantity of water flowing through the tube per second is:

- A.  $8 \text{ cm}^3$                       B.  $1 \text{ cm}^3$                       C.  $16 \text{ cm}^3$                       D.  $4 \text{ cm}^3$

49. An ideal gas at  $27^\circ \text{C}$  is compressed adiabatically to  $8/27$  of its original volume if  $\gamma = 5/3$ , then rise in temperature is:

- A. 405 K                      B. 225 K                      C. 375 K                      D. 450 K

50. Light of frequency  $8 \times 10^{15} \text{ Hz}$  is incident on a substance of photoelectric work function 6.125 eV. The maximum kinetic energy of the emitted photoelectrons will be:

- A. 39 eV                      B. 27 eV                      C. 54 eV                      D. 13.5 eV

51. A refracting angle of a prism is  $A$  and the refractive index of the prism is  $\cot(A/2)$  Then, angle of minimum deviation is:

- A.  $180^\circ - 2A$                       C.  $180^\circ + 2A$   
B.  $90^\circ - A$                       D.  $180^\circ - 3A$



# END OF SCIENCE SKILLS TEST

52. If the critical angle for total internal reflection from medium to vacuum is  $30^\circ$ . The velocity in the medium will be:  
 A.  $\sqrt{3} \times 10^8$  m/s      C.  $1.5 \times 10^8$  m/s  
 B.  $6 \times 10^8$  m/s      D.  $3 \times 10^8$  m/s
53. In a transformer, the number of turns of primary coil and secondary coil are 5 and 4 respectively. If 220 V is applied on the primary coil, then the ratio of primary current to the secondary current will be:  
 A. 9:5      B. 5:9      C. 5:4      D. 4:5
54. If the distance between parallel plates of a capacitor is halved and dielectric constant is doubled then the capacitance will:  
 A. Remain the same  
 B. Increase 4 times  
 C. Increase 2 times  
 D. Decrease 2 times
55. The heat generated in a circuit is dependent upon the resistance, current and time for which the current is flown. If the error in measuring the above are 1%, 2% and 1% respectively. The maximum error in measuring the heat is  
 A. 8%      B. 6%      C. 18%      D. 12%
56. A particle having charge 100 times that of an electron is revolving in a circular path of radius 0.8 m with one rotation per second. The magnetic field produced at the centre will be  
 A.  $10^{-17} \mu_0$       C.  $10^{-7} \mu_0$   
 B.  $10^{-11} \mu_0$       D.  $10^{-3} \mu_0$
57. In a nuclear fission, 0.1% mass is converted into energy. The energy released by the fission of 1 kg mass will be:  
 A.  $9 \times 10^{19}$  J      C.  $9 \times 10^{16}$  J  
 B.  $9 \times 10^{17}$  J      D.  $9 \times 10^{13}$  J
58. Pressure inside two soap bubbles are 1.01 and 1.03 atm. Ratio between their volumes is:  
 A. 27:1      C. 127:101  
 B. 3:1      D. None of these
59. The distance between two points difference in phase by  $60^\circ$  on a wave having a wave velocity 360 m/s and frequency 500 Hz is:  
 A. 0.36m      B. 0.12m      C. 0.18m      D. 0.72m
60. Doubly ionised helium atoms and hydrogen ions are accelerated from rest through the same potential drop. The ratio of the final velocities of helium and the hydrogen ions are:  
 A.  $\frac{1}{2}$       B.  $1/\sqrt{2}$       C.  $\sqrt{2}$       D. 2