

NEW STANDARD ACADEMY

Marks: 120

Date : 26-05-25

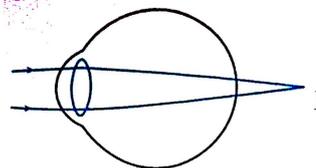
CLASS : 10TH

Time: 2½ hours

PHYSICS

- A person needs a lens of power -5.5 diopters for correcting his distant vision. For correcting his near vision he needs a lens of power +1.5 diopters. What is the focal length of the lens required for correcting?
(i) Distant vision (ii) Near vision
(a) -17 cm, 60 cm (b) -18.18 cm, 66.6 cm
(c) -15 cm, 40 cm (d) -10 cm, 42 cm
- The least distance of distinct vision for an adult man/woman is _____
(a) 25 cm (b) 2.5 m
(c) 25 m (d) 25 mm
- The human eye can focus objects at different distances by adjusting the focal length of the eye lens. This is known as
(a) Presbyopia (b) Accommodation
(c) Myopia (d) Astigmatism
- Hypermetropia is the defect of vision due to which a person finds difficulty in seeing the
(a) Distant objects (b) Nearby objects
(c) Object at all distances (d) Colours
- A person is suffering from the defect of astigmatism, its main reason is
(a) Decrease in the focal length of the eye lens
(b) Power of accommodation of the eye is decreased
(c) Irregular shape of cornea or the imperfect spherical nature of the eye lens
(d) Increase in the focal length of the eye lens
- A person's near point is 50 cm and his far point is 3 m. Power of the lenses he/she requires for
(i) reading and
(ii) for seeing distant stars are
(a) -2 D and 0.33 D (b) 2 D and -0.33 D
(c) -2D and 3 D (d) 2D and 3D
- Myopia is due to
(a) Elongation of eye ball
(b) Irregular change in focal length
(c) Shortening of eye ball
(d) Older age
- The cause of mirage observed in a desert is
(a) Refraction (b) Reflection
(c) Scattering
(d) Total internal reflection
- A person uses a spectacles of power + 2D, he is suffering from

- (a) Myopia (b) Presbyopia
(c) Astigmatism (d) Hypermetropia
- One cannot see through fog. This is because
(a) Fog absorbs light
(b) The refractive index of fog is infinity
(c) Light suffers total internal reflection in the fog
(d) Light is scattered by the droplets in the fog
- In the given figure, the image is formed at the back of retina. The eye is



- (a) Normal (b) Myopic
(c) Hypermetropic (d) Astigmatic
- The size of the pupil of the eye is adjusted by
(a) cornea (b) retina
(c) iris (d) blind spot
- When ciliary muscles are relaxed, focal length of eye lens is
(a) maximum (b) minimum
(c) neither maximum nor minimum
(d) cannot say
- A person with glasses cannot see the object at the distance more than 60 cm from his eye. In order to see the object clearly he must use the lens of power
(a) -60 D (b) +60 D
(c) -1.66 D (d) +1.66 D
- In human eye, the focusing of the image of an object is done by
(a) To and fro movement of the eye lens
(b) To and fro movement of the retina
(c) Change in the convexity of the eye lens
(d) Change in the refractive index of the eye fluids

CHEMISTRY

- While performing the activity if lead nitrate is not available, which of the following can be used in place of lead nitrate?
(a) Lead sulphate (insoluble)
(b) Lead acetate
(c) Ammonium nitrate
(d) potassium sulphate

17. Which of the following statements is true regarding precipitates?
- Product formation after saturation point
 - Product formation before saturation point
 - precipitation does not relate to saturation point of a solution
 - Product with higher concentration in a reaction is precipitate.
18. Which of the following is a double displacement reaction?
- $2KI + Cl_2 \rightarrow 2KCl + I_2$
 - $Al + Fe_2O_3 \rightarrow Al_2O_3 + 2Fe$
 - $BaCl_2 + H_2SO_4 \rightarrow BaSO_4 + 2HCl$
 - $Mg + CuSO_4 \rightarrow MgSO_4 + Cu$
19. The reaction that releases energy is:
- $2FeSO_4(s) \xrightarrow{??} Fe_2O_3(s) + SO_2(g) + SO_3(g)$
 - $3Pb(NO_3)_2(s) \xrightarrow{??} 2PbO(s) + 4NO_2(g) + O_2(g)$
 - $2AgBr(s) \xrightarrow{\text{sunlight}} 2Ag(s) + Br_2(g)$
 - $CH_4(g) + 2O_2(g) \rightarrow CO_2(g) + 2H_2O(l)$
20. $CH_4 + Cl_2 \rightarrow CH_3Cl + HCl$ reaction is an example of:
- synthetic
 - analytical
 - displacement
 - neutralization
21. A brown and bright element "x" when heated in presence of air turns into black substance "y". If hydrogen gas is
- Cu and CuO
 - S and SO₂
 - C and CO₂
 - Na and NaH
22. Displacement reaction is:
- $CaO(s) + H_2O(l) \rightarrow Ca(OH)_2(aq)$
 - $Pb(s) + CuCl_2(aq) \rightarrow PbCl_2(aq) + Cu(s)$
 - $MnO_2(s) + 4HCl(l) \rightarrow MnCl_2(s) + 2H_2O + Cl_2(g)$
 - $C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O$
23. The Chemical reaction $HNO_3 + KOH \rightarrow KNO_3 + H_2O$ is an example of
- neutralization
 - double displacement
 - neutralization and double displacement
 - combination
24. Magnesium ribbon is rubbed with sand paper before making it to burn. The reason of rubbing the ribbon is to
- remove moisture condensed over the surface of ribbon
 - generate heat due to exothermic reaction
 - remove magnesium oxide formed over the surface of magnesium
 - mix silicon from sand paper (silicon dioxide) with magnesium for lowering ignition temperature of the ribbon
25. The reaction that differs from the rest of the reactions given is:
- Formation of calcium oxide from limestone
 - Formation of aluminium from aluminium oxide.
 - Formation of sodium carbonate from sodium hydrogen carbonate
 - Formation of mercury from mercuric oxide.
26. Statement-1: Calcium carbonate when heated decomposes to give calcium oxide and water.
Statement-2: Calcium carbonate when heated decomposes to give calcium oxide and carbon dioxide
- Statement-1 and Statement-2 are True and Statement-2 is the correct explanation of Statement-1
 - Statement-1 and Statement-2 are True but Statement-2 is NOT the correct explanation of Statement-1
 - Statement-1 is True, Statement-2 is False.
 - Statement-1 is False. Statement-2 is True.
27. Statement-1: Brown fumes are produced when lead nitrate is heated because a displacement reaction takes place and lead is formed.
Statement-2: Nitrogen dioxide gas is produced as a by product.
- Statement-1 and Statement-2 are True and Statement-2 is the correct explanation of Statement-1
 - Statement-1 and Statement-2 are True but Statement-2 is NOT the correct explanation of Statement-1.
 - Statement-1 is True, Statement-2 is False.
 - Statement-1 is False, Statement-2 is True.
28. Statement-1: Iodine can't displace bromine from a solution because the reactivity of bromine is higher as compared to iodine. and the outermost electrons are not influenced by the force of attraction exerted by the nucleus.
Statement-2: Iodine is smaller than bromine
- Statement-1 and Statement-2 are True and Statement-2 is the correct explanation of Statement-1
 - Statement-1 and Statement-2 are True but Statement-2 is NOT the correct explanation of Statement-1
 - Statement-1 is True, Statement-2 is False.
 - Statement-1 is False, Statement-2 is True.
29. Statement-1: Balance the following equation with the smallest whole number coefficients. Choose the answer that is the sum of the coefficients, in the balanced equation. Do not forget coefficients of "one"
 $Cr + H_2SO_4 \rightarrow Cr_2(SO_4)_3 + H_2$
The sum of the coefficients, representing the smallest whole number coefficient is 9

Statement-2: The equation can be balanced in many ways.

(a) Statement-1 and Statement-2 are True and Statement-2 is the correct explanation of Statement-1.

(b) Statement-1 and Statement-2 are True but Statement-2 is NOT the correct explanation of Statement-1.

(c) Statement-1 is True, Statement-2 is False.

(d) Statement-1 is False, Statement-2 is True.

30. When lead nitrate is heated a brown gas is evolved the evolved gas is _____

- (a) dioxygen (b) nitrogen dioxide
(c) nitrous oxide (d) dinitrogen

BIOLOGY

31. Choose the correct sequence in blood circulation through human heart:

- (a) Pulmonary vein → Pulmonary artery → Left auricle → Right ventricle
(b) Pulmonary artery → Right auricle → Left ventricle → Pulmonary vein
(c) Right ventricle → Pulmonary artery → Pulmonary vein → Left auricle
(d) Left ventricle → Pulmonary vein → Pulmonary artery → Right auricle

32. Blood consists of fluid medium that is called

- (a) Lymph (b) Platelets
(c) Plasma (d) All of these

33. What is the role of lymph in the body?

- (a) It helps to transport oxygen.
(b) It carries digested and absorbed fat from the intestine.
(c) It increases blood pressure in arteries.
(d) It helps to absorb nutrients in the stomach.

34. When the right ventricle of human heart contracts, then blood is pumped into

- (a) Superior vena cava (b) Dorsal aorta
(c) Pulmonary artery (d) Pulmonary vein

35. In heart, pacemaker is situated in

- (a) Right Ventricle (b) Left Ventricle
(c) Right Auricle (d) Left Auricle

36. Where is the bicuspid valve found in human heart?

- (a) Between two atria
(b) Between two ventricles
(c) Between right atrium and right ventricle
(d) Between left atrium and left ventricle

37. Sphygmomanometer measures

- (a) Wall pressure (b) Blood pressure
(c) Diffusion pressure (d) Air pressure

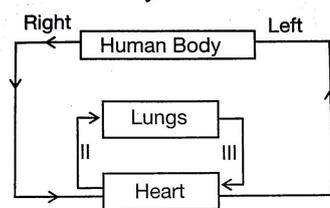
38. Which blood group is called universal donor?

- (a) A (b) B
(c) AB (d) O

39. Oxygen in our blood is transported by a protein, named

- (a) Keratin (b) Collagen
(c) Haemoglobin (d) Myoglobin

40. Figure below reflects the pathway of blood circulation system in the human body



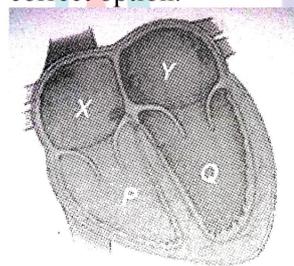
Which of the path contains oxygenated blood?

- (a) (I) and (II) only
(b) (II) and (III) only
(c) (I) and (III) only
(d) (I), (II) and (III) all

41. Choose the correct statement for human blood vessels:

- (a) Arteries always carry oxygenated blood while veins always carry deoxygenated blood.
(b) Arteries are provided with valves while veins are devoid of valves.
(c) Arteries always carry blood away from heart, while veins always carry blood towards the heart.
(d) Venous blood is returned to left auricle.

42. Refer to the given figure of heart and select the correct option.



- (a) The blood from Y reaches lungs.
(b) The blood from body enters heart through P.
(c) Y receives blood from lungs.
(d) Q receives blood from body.

43. In adult man, normal blood pressure is

- (a) 100/80 mm Hg
(b) 120/80 mm Hg
(c) 100/120 mm Hg
(d) 80/120 mm Hg

44. Universal acceptor blood group is

- (a) O^{-ve} (b) AB^{+ve}
(c) B^{+ve} (d) O^{+ve}

45. The instrument used to hear heart sound is

- (a) Electrocardiograph
(b) Sphygmomanometer
(c) Stethoscope
(d) Haemometer

MATH

46. Find the sum of the Aps 8,3,-2,... to 28 terms

- (a) -1999 (b) -1666
(c) 1999 (d) 1666

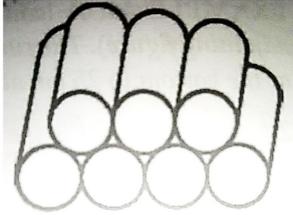
47. The first term of an AP is -5 and the last term is 45. If the sum of the terms of the AP is 120 then find the number of terms and the common difference.

- (a) 10 (b) 20
(c) 30 (d) -10

48. Find the sum of the last 10 term of the Ap: 8, 10, 12, ..., 126.

- (a) 1170 (b) 2140
(c) 3017 (d) -1710

49. 250 logs are stacked in the following manner 22 logs in the bottom row, 21 in the next row, 20 in the row next to it and so on (as shown by an example). In how many rows, are the 250 logs placed and how many logs are there in the top row?



- (a) 1 (b) 2
(c) 3 (d) 0

50. A thief runs with a uniform speed of 100 m/minute. After one minute a policeman runs after the thief to catch him. He runs with a speed of 100 m/minute in the first minute and increases his speed by 10 m/minute every succeeding minute. After how many minutes the policeman will catch the thief?

- (a) 1 (b) 2
(c) 3 (d) 5

51. Find the value of x when $2+6+10+\dots+x=1800$

- (a) 125 (b) 118
(c) -118 (d) -125

52. Find the sum of all two digit numbers which when divided by 7 yield 1 as the remainder.

- (a) 741 (b) 147
(c) 417 (d) 714

53. Prema saves ₹ 32 during the first month, 36 in the second month and ₹ 40 in the third month. If she continues to save in this manner, in how many months will she save 2000?

- (a) 23 (b) 26
(c) 24 (d) 25

54. The first term of an AP is 5 and the last term is 45. If the sum of all the terms is 400, then the number of terms is

- (a) 20 (b) 8
(c) 10 (d) 16

55. If the nth term of an AP is $2n + 1$ then the sum of first n terms of the AP is

- (a) $n(n - 1)$ (b) $n(n + 1)$
(c) $n(n - 2)$ (d) $n(n + 2)$

56. If the 18th and 11th terms of an AP are in the ratio 3:2, then its 21st and 5th terms are in the ratio

- (a) 2:3 (b) 1:3
(c) 3:1 (d) 3:2

57. The sum of first five multiples of 3 is

- (a) 45 (b) 55
(c) 65 (d) 75

58. The number of multiples of 4 that lie between 10 and 250 is

- (a) 62 (b) 60
(c) 59 (d) 55

59. The sum of first 100 even natural numbers is

- (a) 10100 (b) 2550
(c) 5050 (d) 10010

60. $t_{19} = 0$ find the ratio of t_{49} & t_{29}

- (a) 3:3 (b) 3:4
(c) 3:2 (d) 3:1