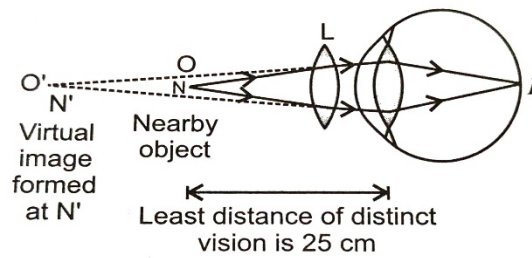


BCM SCHOOL, BASANT AVENUE, DUGRI ROAD, LUDHIANA
CLASS X
ASSIGNMENT - ANSWER KEY
SUBJECT - SCIENCE

	BIOLOGY	9
1.	b) Glomerulus The glomerulus filters the blood during urine formation.	1
2.	a) Both A and R are true, and R is the correct explanation of A.	1
3.	a) Both A and R are true, and R is the correct explanation of A.	1
4.	Fishes have only two chambers in their heart, the blood is pumped to the gills to get oxygenated blood and from there it passes directly to the rest of the body. Thus, the blood goes only once through the heart during one cycle of passage through the body. This type of circulation is termed as single circulation.	2
5.	a) Ultrafiltration: Blood is filtered under high pressure in the glomerulus. Water, salts, glucose, amino acids and nitrogenous wastes pass into Bowman's capsule. b) Selective reabsorption: Useful substances such as glucose, amino acids, most water and required salts are reabsorbed into the blood from the renal tubule. c) Tubular secretion: Additional wastes and excess ions are secreted from the blood into the tubule. d) Formation and removal of urine: The remaining fluid forms urine, which passes through the collecting ducts into the ureters, is stored in the urinary bladder and is finally expelled through the urethra.	4
	CHEMISTRY	8
1.	(c) Hydrochloric acid solution Hydrochloric acid produces a high concentration of hydrogen ions (H ⁺) in aqueous solution.	1
2.	When an acid reacts with a metal carbonate, it produces salt, water and carbon dioxide gas. Acid + Metal carbonate → Salt + Water + Carbon dioxide** Example: 2HCl + Na ₂ CO ₃ → 2NaCl + H ₂ O + CO ₂	2
3.	a) Identification: Solution A (pH 2): Strongly acidic Solution B (pH 7): Neutral Solution C (pH 12): Strongly basic	5

	b) Solution A will have the highest concentration of H⁺ ions because a lower pH indicates a higher concentration of hydrogen ions. c) A neutralisation reaction will occur when acidic solution A is added to basic solution C. Acid + Base → Salt + Water As solution A is added, the pH of solution C will gradually decrease towards 7, provided the acid is added in a suitable amount. d) One practical application is the use of antacids to neutralise excess acid in the stomach, providing relief from acidity.	
	PHYSICS	8
1.	A	1
2.	(i) Red light has the longest wavelength among all colors in the light. So it is scattered the least by air molecules, dust particles, fog, or smoke. This allows red light to travel long distances making it clearly visible from far away. (ii) No dispersion occurs. The first prism disperses the incoming white light into its seven component colors (VIBGYOR). When these dispersed rays pass through the second, inverted prism, it bends the colors at equal angle in the opposite direction. This recombines all the colors back into a single beam of white light, making the combination behave like a parallel glass slab.	2
3.	The astronaut on the Moon will see the star at its true geometric position. The Moon has no atmosphere hence no atmospheric refraction of light occurs and light coming from the star travels in a perfectly straight line without experiencing any bending. On the other hand earth has an atmosphere so light will undergo atmospheric refraction due to different refractive indexes of layers. So observers from earth see the star at its apparent position which is slightly higher than its actual geometric location.	2
4.	(i) Hypermetropia Causes:	3

Shortening of eye ball
Increases in the focal length of eye lens
(ii) Converging lens



(iii) Near point of defected eye (v) = -50cm
Near the point of the normal eye. (u) = - 25cm
Using lens formula

$$\frac{1}{f} = \frac{1}{v} - \frac{1}{u}$$

$$\frac{1}{f} = \frac{1}{-50} + \frac{1}{25} = \frac{1}{25}$$

$$F = 25\text{cm}$$

$$P = \frac{100}{25} = +4 \text{ D}$$