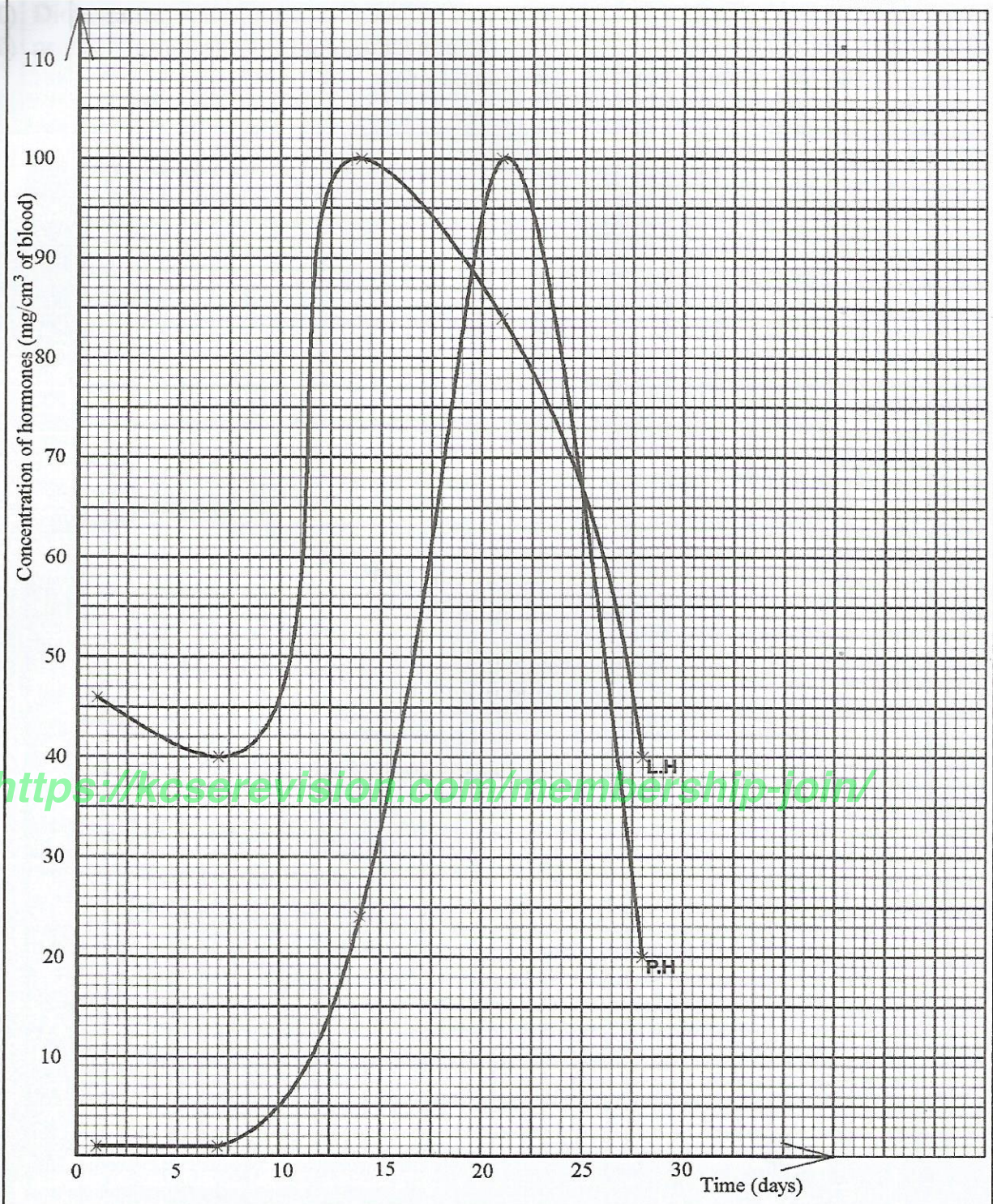
1. (a)	(i) Diplopoda; (ii) • Two pairs of walking legs per segment; • Many segments; • Cylindrical; • A pair of short antennae; (iii) • Decomposes the organic matter/enriches soil fertility; • Aerates the soil (through its movements/burrowing);	(1 mark) (2 marks) (2 marks)
(b)	(i) Monera; (ii) • Cholera; • Typhoid; • Tetanus; • Menengitis; • Tuberculosis;	(1 mark) (2 marks)
2. a)	• Moist to dissolve respiratory gases for faster gaseous exchange; • Lined with a one-cell-thick epithelium/thin membrane for faster diffusion of respiratory gases/reduce diffusion distance; • Highly vascularized for faster/efficient transportation of respiratory gases;	(2 marks)
b)	• Lined with hair; to trap dust particles/foreign materials/purify the incoming air/trap dust; has mucus; to moisten/warm the incoming air;	(3 marks)
c)	Has a large surface area to volume ratio; diffusion (across its cell membrane) is adequate;	(2 marks)
d)	Whooping cough;	(1 mark)
3. a)	i. Sebum;	(1 mark)
	ii. • keeps the skin moist/supple/soft/water-proof/repellant; • acts as an antiseptic/kills bacteria;	(2 marks)
b)	Sweat pore;	(1 mark)
c)	Thermoregulation: lies flat or erects (on the skin surface) when hot/cold to conserve heat/ to lose excess heat;	

4. a)	♂ Black fur male ♀ Black fur female Parental phenotype: Black fur male Black fur female Parental genotype: Nn Nn ; Gametes: N n x N n ; ; F_1 offspring: NN Nn Nn nn ; Black fur homozygous; Black fur heterozygous; Brown fur Phenotypic ratio: 1 Black fur homozygous : 2 Black fur heterozygous : 1 nn Brown fur ;	(5 marks)
b)	(i) The trait is sex-linked; the gene responsible for the hairy pinna is found/attached to the **Y** - chromosome; (ii) (Premature) baldness; hairy nose; Duchene muscular dystrophy;	(2 marks)
5. a)	Sunlight enables the skin to synthesize vitamins **D**, which is necessary for the formation of strong bones;	(1 mark)
b)	(i) Sacrum/sacral vertebra;	(1 mark)
	(ii) coccyx;	(1 mark)
	(iii) • Presence of prezygapophysis to articulate with the lumbar vertebrae; • Large, broad centrum to offer support; • Wide neural canal for passage of blood vessels/nerves/spinal cord; • Fused vertebrae to form a rigid/firm structure; • Sacral foramen for passage of nerves/blood vessels; • Neural spine/process for muscle attachment;	
c)	Plants move to reach/access light, water/moisture, carbon (IV) oxide (for photosynthesis); they also move to escape harmful environmental conditions/for safety/withstand harsh external forces; as well as for (mechanical) support;	(2 marks)

6. a)



- Plotting - 02 marks
- Scale – 02 marks
- Smooth curves – 01 mark
- Appropriate labelling of axes – 02 marks
- Identity of curves - 01 mark

(8 marks)

b) (i) Ovulation; (1 mark)

(ii) Releases the ovum; (1mark)

c)	(i) 100mg/cm^3 of blood; (ii) Endometrium is thickest when the concentration of progesterone is highest (in preparation for implantation);	(1 mark) (1 mark)
d)	• Inhibits production of luteinizing/follicle stimulating hormones; • Stimulates the thickening of the endometrial lining (for implantation); • Maintains pregnancy;	(2 marks)
e)	• Corpus luteum/ovary; • Placenta;	(2 marks)
f)	Prolactin hormone;	
g)	i) Will remain low/keep decreasing (any value below 20 mg/cm^3); ii) The Corpus luteum will have broken down/degenerated;	(1 mark) (1 mark)
h)	(Anterior) pituitary gland;	
7. a)	The placenta plays the respiratory/gaseous exchange; excretory; nutritive; endocrine; barrier; and immunological functions; Exchange of respiratory gases, supply of oxygen-to the foetus' tissues and removal of carbon (IV) oxide from the foetus takes place across the placenta; Nutrients/food substances are released into the foetus from the mother's system through the placenta; The placenta also serves as a barrier, preventing the mixing of maternal and foetus' blood/poisonous/harmful substances/parthogens from the mother; Some hormones/enzymes; needed for the foetus' development are also passed from the mother to the foetus through the placenta; Some antibodies needed for the protection of the foetus from infections are also passed from the mother to the foetus through the placenta; Some waste products, like urea, are passed from the foetus through the placenta;	(10 marks)

b)	Dichogamy; where either the male or female parts of the plant reproductive organs ripen at different times in some plants; Protandry; where stamens/anthers/stamens mature earlier than the pistil; while protogyny where the pistil/carpels mature earlier than the stamens; Self-sterility/incompatibility; where pollen grains cannot germinate on the stigma of the same plant but only germinate on a different plant of the same species, hindering self-pollination; Heterostyly; a condition of the style and stigma being above/higher than anthers/stamens; making it impossible for the pollen to land, accumulate and fertilize the ovules of the same flower; Dioecious; where plants have reproductive parts located separately on different plants of the same species, discouraging self-pollination; Monoecious; plants have the reproductive parts located at different parts on the same plant, discouraging self-pollination;	(10 marks)
8. (a)	Xylem vessels; are tubular/hollow/run continuously from the roots through the stem to the leaves; walls are strengthened with lignin; preventing them from collapsing; the vessels/tracheids have bordered pits; to allow lateral movement of water; tracheids have perforated cross-walls; the pits on side walls allow for movement of water; they are narrow to enhance capillarity; tracheids have (chisel-shaped ends) and perforated cross-walls; to ease movement of water;	(5 marks)
(b)	Human blood is made up of plasma; which transports vitamins/mineral salts and digested food materials to tissues of the body where they are needed; hormones are also transported by blood from the secretory sites to the target tissues/organs (to bring about the needed hormonal responses); blood transports enzymes to tissues where they are required to catalyze certain reactions; waste products (ammonia/dead/worn out tissues/cells/carbon (IV) oxide) are transported in the blood; Erythrocytes; (are important) in the transportation of oxygen from the lungs to different body tissues; and carbon (IV) oxide from (respiring) tissues to the lungs (for purification); Blood plasma plays a thermoregulatory role; by distribution of heat; (throughout the body/emitting excess heat to the surroundings, based on the external temperatures); Leucocytes; protect the body against infections (from bacteria/viruses); Some leucocytes, like phagocytes use amoeboid movements to engulf the invading pathogens; The plasma transports antibodies; throughout the body for defense against pathogens; Platelets play a role in the clotting of blood/protect damaged body tissues; (by releasing thromboplastin; which initiates the clotting process); preventing excessive loss of blood/entry of pathogens;	(15 marks)