KENDRIYA VIDYALAYA SANGATHAN LUCKNOW REGION

ANSWER KEY

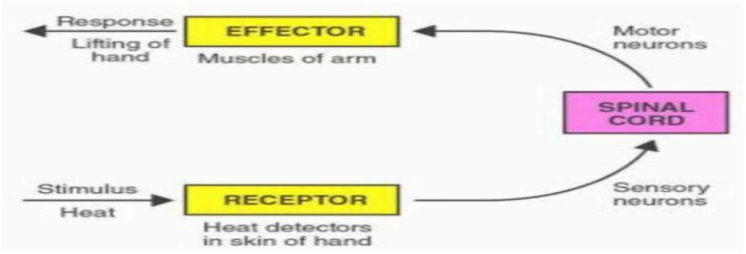
CLASS-X SUBJECT – SCIENCE

SECTION – A

Ans. 1. b
Ans. 2. b
Ans. 3. d
Ans. 4. c
Ans. 5. c
Ans. 6. c
Ans. 7. a
Ans.8.d
Ans. 9. a
Ans. 10. d
Ans. 11. a
Ans. 12. c
Ans. 13. c
Ans. 14. a
Ans. 15. d
Ans. 16. a
Ans. 17. a
Ans. 18. d
Ans. 19. a
Ans. 20. a (1*20=20)

SECTION – B

Ans. 21. Reflexes are very sudden, automatic & unconscious response of the body parts towards stimuli. (0.5+1.5=2)



Ans. 22. Given: I=5A V= 220V

a. Power(P)= V X I = 220V X 5A
=1100VA = 1100W

= 1.1KW

a. Electrical energy consumed E= P x t = 1.1 x 2h=2.2kWh.(1+1=2)

OR

i) Rs=R2+R3+R4 =6+8+2=16 Ohm
ii) 1/Rp=1/R1+1/Rs
=1/4 + 1/16
1/Rp=4+1/16
1/Rp =5/16

Rp= 16/5 =3.2 Ohm (1+1=2)

Ans. 23.a. Thermal Decomposition: Energy supplied in the form of heat. $CaCO_3 \xrightarrow{} CaO + CO_2$

b.Photolytic Decomposition : Energy is supplied in the form of light. $2AgCl \xrightarrow{} 2Ag + Cl_2$ (1+1=2)

Ans. 24. a. Ozone gas b. CFCs- ChloroFluoro Carbons c. Ozone layer acts as a protective shield and protect us from harmful UV rays of the sun. (1/2+1/2+1=2)

Ans. 25. Organs of human excretory system are: Kidney, ureter, Urinary bladder &urethra(1/2*4=2)

Ans. 26. (Any two points) (1+1=2)

a. Alveoli are tiny balloon like structures present in millions of number.

b. They provide large surface area for exchange of gases.

c. They are richly supplied with blood capillaries.

SECTION- C

Ans. 27.a). Silver is highly malleable metal b). Silver is one of the most lustrous metal.

c). Silver is best conductor of electricity. (1+1+1=3)

Ans. 28. a). Amount of energy available to Grass (1%) = 10000* 1/100=100kJ (1.5+1/2+1=3)

Amount of energy available to Deer (10%) = 100* 10/100 =10kJ

Amount of energy available to Tiger (10%) = 10* 10/100 = 1kJ

b). Secondary Consumer (Carnivore)

c). Mushrooms act as decomposers and help in decomposing the organic matter into humus.

Ans. 29.Given: ho =5 cm u = -20 cm R =30 cm f =R/2=30/2=15 cm

a). $1/f = 1/v + 1/v$

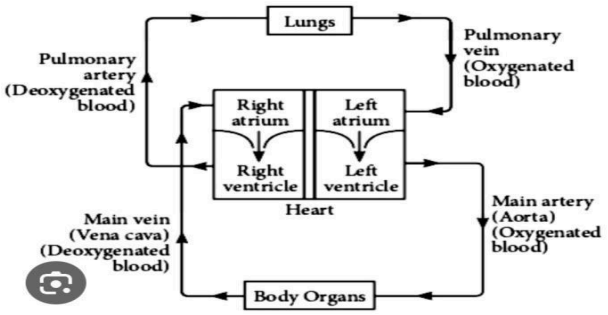
$1/v = 1/f - 1/u$
$1/v = 1/15 - 1/-20$
$1/v = 1/15 + 1/20$
$1/v = 4+3/60$
$1/v = 7/60$
$V = 60/7 = 8.57$cm

b). $m = hi/ho = -v/u$

$hi = -v * ho/u$
$hi = - 60/7 * 5/-20$
$hi = 2.14$ cm

c). Nature: Virtual & erect and smaller (1.5+1+1/2=3)

Ans.30. a). The circulation of blood two times through the heart in one cycle.



OR

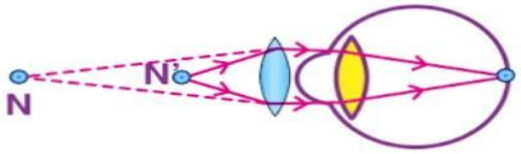
The following events occur during photosynthesis: (1+1+1=3)

a. Absorption of light energy by chlorophyll (Light reaction).
b. Conversion of light energy to chemical energy and splitting of water molecules into hydrogen and oxygen (Photolysis).
c. Reduction of Carbon dioxide to carbohydrates(Dark reaction).

Ans. 31. a. N b. ii c. i (1+1+1=3)

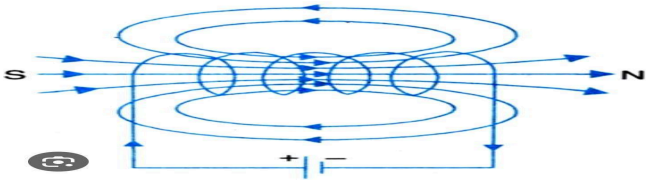
Ans. 32.a. Hypermetropia (far sightedness)(1+2+1+1=5)

a. Causes(any two): Shortening of eye ball, Increase in focal length of eye lens, Image is formed beyond retina.
b. Correction: Using Convex lens of suitable focal length.



Ans. 33.Characteristics of Magneticfieldlines (any two): (2+1=3)

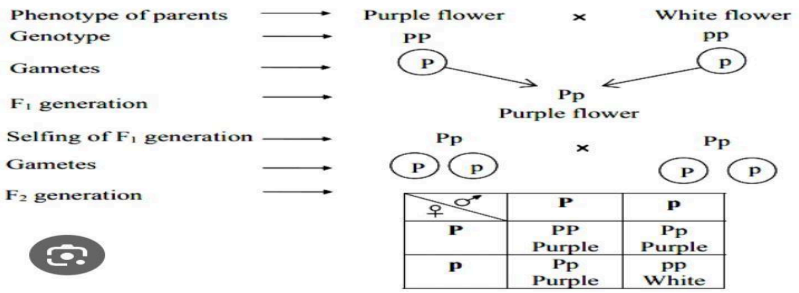
a. They always originate from North Pole of the magnet.
b. They are closed concentric circles.
b. They never intersect each other at any point.
c. They have both magnitude and direction (vector) at any point on the field.



SECTION - D

Ans.34.a. This statement is true because the sex of the child is determined by the sex chromosomes. If a sperm carrying X chromosomes fertilises an ovum, it is a female child and it will a male child only when a sperm carrying Y chromosome fertilises an ovum, Therefore ,it is totally a matter of chance that which sperm fertilises an ovum. (1.5+2+1/2+1/2+1/2=5)

b.i. genotype ratio: 4: 0 (Purple : White)



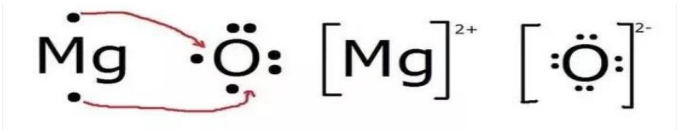
ii. Monohybrid cross

iii. Purple coloured flower

iv. % of Purple flowers in F2= 3/4*100

=75%

Ans.35.a (2+1+1+1=5)

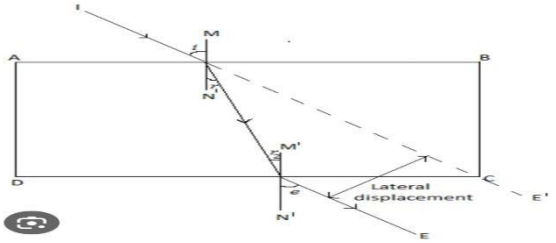


b.Ionic Bonding (Electrovalent bonding)

c. Due to the presence of ions.

d. Ionic compounds have strong force of attraction between the oppositely charged ions.

Ans.36.a. (3+1+1=5)

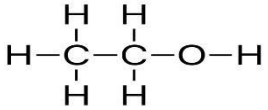


b).i. B ii. A

SECTION – E

Ans. 37.a). Ethanoic acid (1+1+1+1=4)

b).



a. S= Ethyl ethanoate (ester)

b. $CH_3COOH + C_2H_5OH$ -----$CH_3COOC_2H_5 + H_2O$

Ans. 38. a). Current(I) is directly proportional to Potential difference(V). Current increases with increases with Voltage (V/I=R) (1+1+1+1=4)

b.Yes c. iii. D. Ammeter

Ans.39.a). Binary fission b). Yes c). iii. d). Spirogyra