Answer Key Pre Board Exam 2024

1.A

2.C

3.D

4.C

5.C

6.III

7.C

8.D

9.C

10.B

11.D

12.A

13.B

14.B

15.A

16.D

17.B

18.A

19.A

20.C

21.

F=+15 cm, U= -10 cm V=?

$1/V + 1/U = 1/F$

$1/V = 1/F - 1/U$

$1/V = 1/15 - 1/(-10)$

$1/V = (10+15)/150 = 25/150 = 1/6$

V = 6 cm

22. A) Hydrochloric Acid- It creates an acidic medium which facilitate the action of enzyme pepsin. (1/2 X 4)

B) Villi- It increases the surface area for absorption.

C) Anal Sphincter- The exit of waste material (unabsorbed food) is regulated by anal sphincter.

D) Lipase- It helps in breaking down emulsified fat into fatty acid and glycerol.

23. A) $BaCl_2 + Al_2(SO_4)_3 = BaSO_4 + AlCl_3$ 1 X 2= 2

B) $2Al(s) + 3 H_2O \longrightarrow Al_2O_3 (s) + 3 H_2 (g)$

24. A) 10000 joules because it follows the 10 % law which states that 10% of energy is available for next trophic level from previous trophic level. 1

B) No, since the loss of energy at each step is so great that very little usable energy will remain available after 4 trophic levels. 1

25.A) Anther. B) Pollen tube. C) Stigma. D) Ovary (1/2 X 4)

26.pH would be 7. This salt would be made from NaOH and HCl . Both of these are strong acid and strong base so the salt made from these would be neutral. 2

27. A) Test Tube B 1 X 3=3

B) Copper is lower to iron in the reactivity series so displacement reaction will be maximum in test tube B

C) $Fe + CuSO_4 = FeSO_4 + Cu$

28. A) Name of the gas is hydrogen 1

B) This gas burns with a POP sound 1

C) $Zn + 2\ NaOH = Na_2ZnO_2 + H_2$ ½ + ½

$Zn + 2\ HCl = ZnCl_2 + H_2$

29. A) In the F1 progeny green stemmed tomato will be obtained 1 X 3 =3

B) 25% plant will be purple stemmed if F1 plants are self pollinated

C) Genotype GG and Gg would be in the ratio of 1:2 in F2 progeny

30.A) Hormone – Insulin , Gland – Pancreas .5 X6=3

B) Hormone- Testosterone, Gland- Testes

C) Hormone- Thyroxine, Gland- Thyroid

31.A) Dispersion of white light into seven colours on passing through a prism. (1 X 3= 3)

B) Velocity is directly proportional to wavelength given constant frequency so yellow will have greater wavelength than blue as the velocity of yellow light is greater than blue.

C) The blue colour will scatter the most out of these two because of having shorter wavelength.

32. The three advantages are as follows-

A) Proper voltage to every appliance

B) Separate switches for each appliances

C) If one appliance fail other remains functional.

33. A) Increases ,if the current is increased as B is directly proportional to I. B)

Reverses on reversing the current.

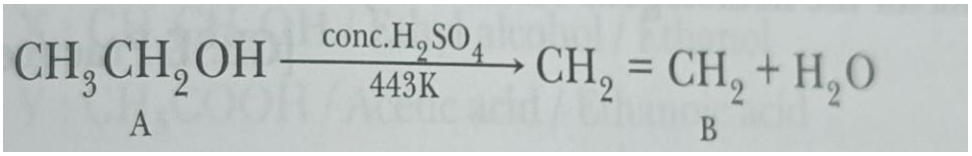
C) Increases, if the number of turns in the coil increases as the field is directly proportional to the number of turns.

34. (i) A: CH_3CH_2OH / Ethanol/Ethyl alcohol

B: CH_2=CH2/Ethene

CH3-CH3/Ethane

(ii)



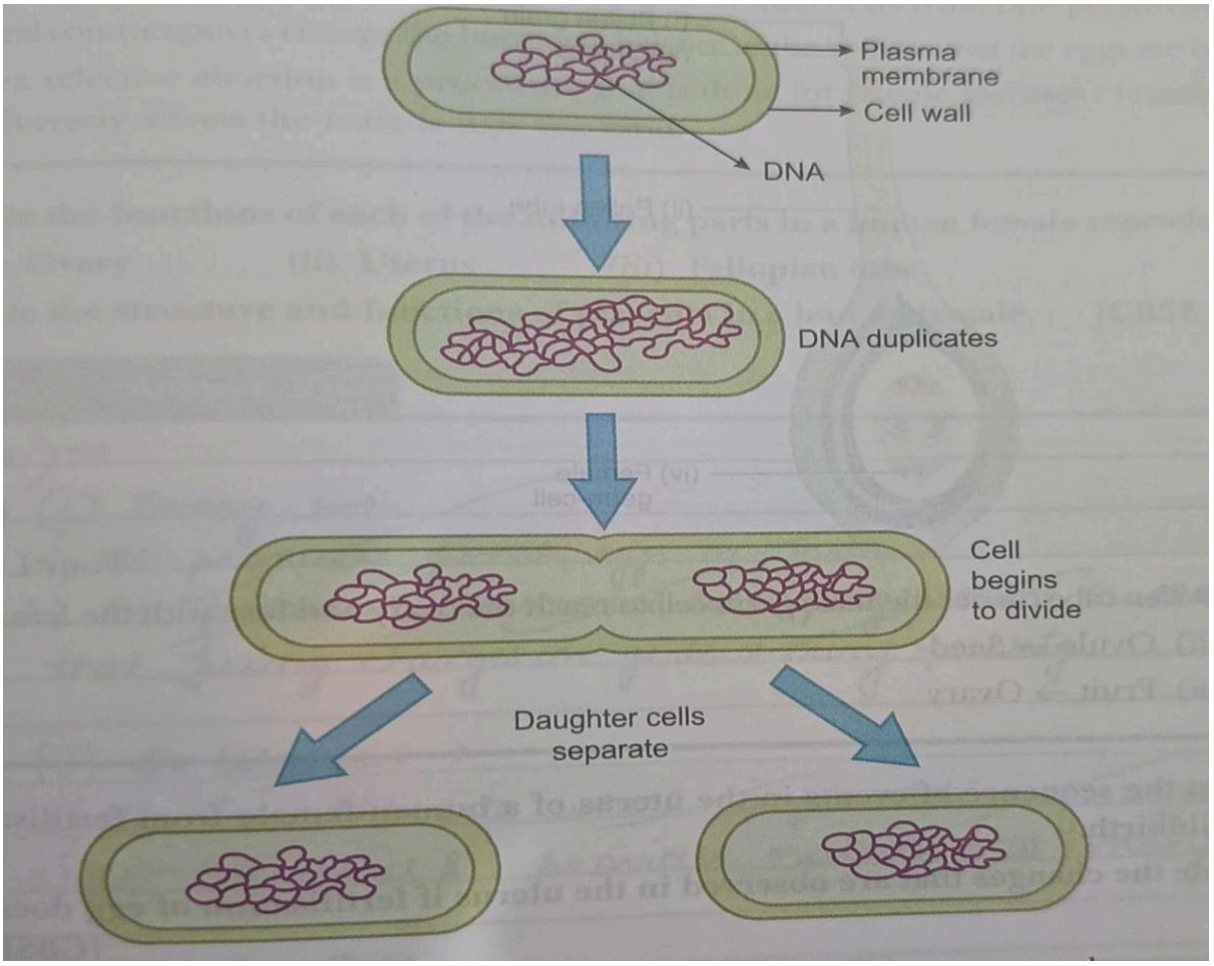
(ii) Carbon dioxide and water are produced and a large amount of heat is released /

$C_2H_6 + O_2 \rightarrow 2CO_2 + 3H_2O$ + Heat

(iv) Conversion of vegetable oil into fats.

(v) Sodium ethoxide and hydrogen.

35. (i)



(ii) Multicellular organisms cannot reproduce by cell division because they are not a random collection of cells. In them, specialized cells are organised as tissues which are further organised into organs and organ systems. In such an organised condition, cell-by-cell division would not be possible. Multicellular organisms, therefore, require to use more complex ways of reproduction.

36. (i) Convex lens

(ii) In this case, v = 7m and f = 5m

Using lens formula,

$1/f = 1/v - 1/u$

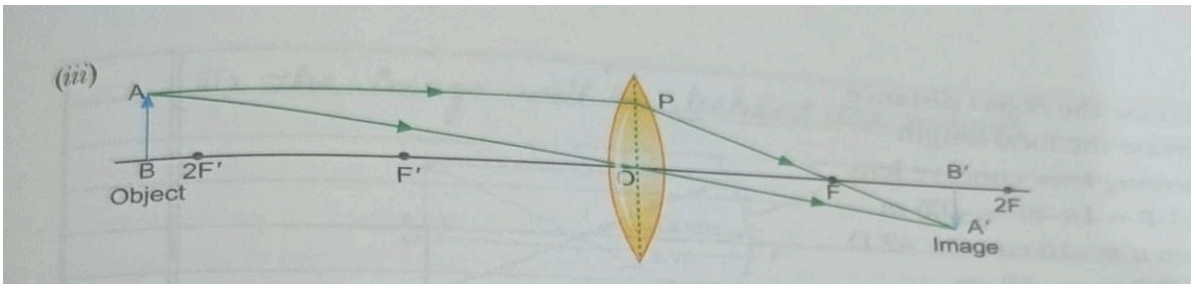
$1/5 = 1/7 - 1/u$

$\Rightarrow 1/u = 1/7 - 1/5 = (5 - 7)/35 = - 2/35$

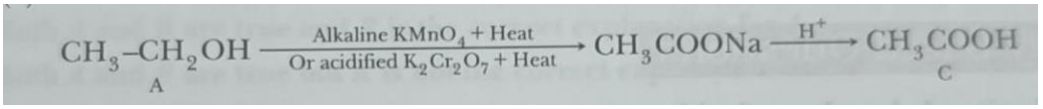
$u = - 35/2 = - 17.5m$

The object will be placed 17.5 m on the left of the convex lens.

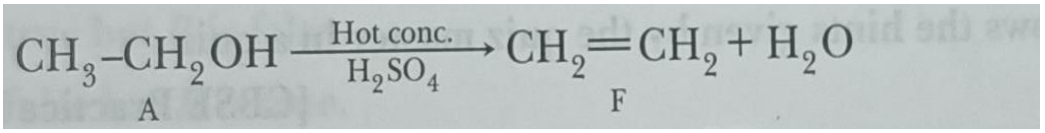
(ii)



37. (a) A-Ethanol; F - Ethene



(b)



OR

Oxidation, Addition/ Hydrogenation Propanol, Propene.

38. (i) Free ear lobe is dominant because it is found in a large majority of the population.

(ii) No. It is not sex linked. As per the data of the family as well as the class, it is indicated that free ear lobe is present in males as well as in females.

(iii) Father - Ff (free ear lobe), Mother - Ff (free ear lobe), Rahul - ff (attached ear lobe) and Nisha Ff (free ear lobe).

39. (i) Total resistance between A and B = 4 + 6 + 16 = 26 Ω

(ii)Total resistance between B and C, 1 / R = 1/8 + 1/8

/ R = 2/8

R = 4 Ω

(iii) Total effective resistance = 26 + 4 = 30 Ω

Using, I = V / R = 6/30 = 0.2A

OR

In the given circuit, the 16 Ω resistor is in series with other two resistors (4 Ω and 6 Ω) and the combination of two 8 resistors is in parallel. The total resistance in series is 26 Ω whereas effective resistance of parallel combination is 4 Ω. So, the 16 Ω resistor will have more potential difference than the parallel combination of two 8 Ω resistors,