

1- (A) or (B)

(A) The rib.

(Page 8)

or

(B) Cytoplasmic streaming.

(Page 14)

(one mark)

2- (A) or (B)

A) Interleukins: They mediate communication between different immune cells on one hand and between immune system and different body cells on the other hand. They help the immune system to perform its defence function.

(Page 94)

or

(B) The cork formation: are formed to isolate areas that exposed to cut or tearing due to the increase in the thickening of plant during its growth and prevents the entry of the pathogen to plant.

(Page 86)

(one mark)

3- (A) or (B)

(A) The endosperm: It surrounds the embryo inside the seed. It supplies the early developing embryo with nutrients.

(Page 57)

or

(B) Embryonic membranes: It surrounds the embryo with a fluid. Its serves to protect the embryo against shocks and dryness.

(Page 68)

(one mark)

4- c) Fallopian tube. **(one mark) (Page 65)**

5-

Because they must pass in the process of maturation and differentiated in the lymphoid organs after that it changes into cell that have the ability of immunization. **(Page 92)**

(one mark)

6-

This cause atrophy and death of the growing tip cells in plants. New tissues are regenerated undermaeth the dead cells, these new tissues contain some polyploid cells (induced mutation). **(Page 129) (one mark)**

7-

1st) Interstitial cells: no. (1) when absent the secretion of the testosterone hormone is stopped.

The importance of structure no. (2): secrete fluid to nourishe the sperms inside the testis and give also immunization function.

2nd) no. (3) spermatogonia. the chromosomal number for no. (4) is (N)

(Page 60-61) (Two Marks)

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النموذج (أ)

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8-

Alpha cells: Small in number –
secrete glucagon hormone.

Beta cells: Represent the majority
of cells - secrete Insulin hormone

(Page 33) (Two Mark)

9-

3UAC – AUA – CAC – UUA – UGG 5

(1 mark)

Methionine – Tyrosine – Valine – Asparagine – Threonine

(Page 137) (1 mark)

10- (A) or (B)

The twining of the tendril around the support is due to slow growth on the side in contact with the support and accelerated growth on the side of the tendril away from the support. This leads to elongation of the far side and so the tendril twines around the support. **(Page 13)**

or

To act as hooks that pull the actin filaments from both sides towards each other by using the energy stored in ATP leading to contraction of the muscle fiber. **(Page 18)**

(one mark)

11-

d) Monocytes.

(Page 93) (one mark)

12-

With the end of the first week it becomes rich blood supply necessary for the development of embryo along the nine monthes of pregnancy.

(Page 68) (one mark)

13-

The production of ribosome will not take place, so protein can not be synthesised.

(Page 134) (one mark)

14- Agglutination (clumping)

(Page 97) (one mark)

15-

A) (2N)

(Page 50) (½ mark)

B) (N)

(Page 64) (½ mark)

16- (A) or (B)

(A)

Perforating protein: Protein create pores in the membrane of the foreign body.	Lymphokine: Suppress or inhibit the immune response or stop it, therefore, plasma cells will stop producing antibodies and many of the T helper cells and active T cytotoxic B-cells will die. (Page 105)
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(B)

Cytotoxic T-cells (Tc): Attacking carcinogenic cells, the transplanted organs and body cells which infected with the virus.	Helper T- cells (TH): Activate other types of T-cells and stimulate it to do their responses, as well as stimulate B cells to produce antibodies. (Page 92)
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(Two Marks)

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النموذج (أ)

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17-

1st - ACTH: From adenohypophysis (Anterior lobe of pituitary gland).

Stimulates the cortex of adrenal gland to produce its hormones.

(Page 28)

2nd - ADH: In the neurohypophysis (Posterior lobe of pituitary gland).

Increases the reabsorption of water in the nephrons and decreasing the volume of urine excreted, increases blood pressure.

(Page 29)

(Two Marks)

18-

1st) No. (1): Double nitrogen bounds.

No. (2): Triple hydrogen bounds.

No. (3): (OH) group.

2nd) Deoxyribose sugar.

(117 Page) (Two Marks)

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19- (A) or (B)

(A) Interferon.

(Page 145)

or

(B) Nonhiston (Structural protein).

(Page 124) (one mark)

20- (A) or (B)

(A) The posterior part (cerebral part) consists form a cavity to protect the brain.

(Page 8)

or

(B) Subterranean storing stems remain at a suitable distance from the soil surface by the help of these pulling roots, which support the aerial parts against wind effects.

(Page 14)

(one mark)

21-

(A) Because it produced from the germination of spore (N) on a wet solid forming several cells.

(Page 50)

or

(B) To prepare a condition cooler than the body temprature this is suitable for spermatogenesis.

(Page 59)

(one mark)

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22-

Planaria have the ability to regenerate even if cut into a several transverse pieces or 2 longitudinal parts. Each will grow into a new individual.

(Page 43) (one mark)

23-

c) Suppressor T-cells

(Page 92) (one mark)

24-

They isolate and transplant the genes that enable members of legumes to house nitrogen fixing bacteria in their roots into other crop plants. It would eliminate the need for nitrogen fertilizers.

(Page 146) (one mark)

25-

1st)

3TAC-GGA-ACT-CGT-TAC..... 5

2nd) 5 Amino acids.

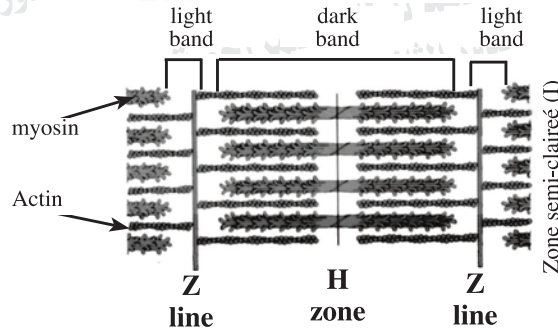
(Page 134) (Two marks)

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26-



(Page 16) (Two marks)

27-

1st) No. (3) Variable region (V).

(Page 96)

2nd) The binding between an antigen and its specific antibody as the variable regions (v) as the shape varies from antibody to another.

3rd) Humoral or antibody – mediated immunity

(Two marks)

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28- (A) or (B)

(A) As in Spirogyra when the conjugation occurs between the adjacent cells of the same filament. **(Page 48)**

or

(B) Because it comprises the whole plant hormones and nutrient elements **(Page .45) (one mark)**

29-

b) Antibodies and the active T-cells. **(Page 106) (one mark)**

30-

1st - 10 pairs. **(Page 8) (½ mark)**

2nd - 26 bones. **(Page 10) (½ mark)**

31-

Normal development was proceeded giving rise to individuals identical in charaters to the individual from which the cultured nuclei were taken.

(Page 74) (one mark)

32- Chemokines.

(Page 94) (one mark)

33- It leads to musclaniztion in female.

(Page 32) (one mark)

34- (A) or (B)

(Two marks)

(A)

<p>Tonsils: they are two lymphoid glands located on both sides of the rear portion of the mouth. Pick up any microbe or foreign body that may enter with food or air and prevent its entry into the body and to protect the body.</p>	<p>Peyer's patches: A small lymphoid cells that accumulate in the from of masses or aggregations spread to the mucous member are lining the lower part of the small intestine Play a role in the immune response against pathogenic microorganisms that enter the intestine.</p> <p>(Page 90 , 91)</p>
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(B)

<p>The epidermal cells of the plant: The first bulwark in resistance. They may be covered with waxy layer forming water-repellent surface so, the water does not settle on the surface. The epidermis may covered with hairs and thorns to avoid the accumulation of water.</p>	<p>The cell wall: Represents the outer protection of the cells, especially the epidermal layer, which consists mainly of cellulose and after thickening by lignin that makes it so difficult for the pathogens to penetrate.</p> <p>(Page 86)</p>
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النموذج (أ)

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35-

1st) b) Replicated DNA strand.

2nd) (C)

3rd) (B) DNA polymerase.

DNA ligase.

(Page 121) (Two Marks)

36-

1st - Epididymis: transfer the sperms from testes to the vas deferens.

Prostate gland: secretes a sugary fluid (which nourishes sperms) and alkaline fluid to neutralize the acidity in the urethra. (Page 60)

2nd- Finger-like ends in funnel of fallopian tube: to receive the ovum Vagina folds: to allow vagina expansion during birth. (Page 63)

(Two Marks)

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37- (A) or (B) (one mark)

(A) Typical flower.

(Page 52)

(B) Spores.

(Page 44)

38-

A single strand sequence of nucleotides complementary to one strand of the gene in question is prepared; using radio-active nucleotides so that, the sequence is labelled and can easily be identified later. This preparation is then mixed with the unknown sample. The concentration of the gene in the sample is indicated by the rate of formation of radio-active double helices.

(Page 141) (one mark)

39-

Formation of toxic substances, meanwhile symptoms of Malaria fever appear on the patient.

(Page 49) (one mark)

40-

a) 3rd.

(Page 69) (one mark)

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41-

Will prevent the viruses from adhering to the membrane of the host's cells and from spreading or pass to inside them.

(Page 97) (one mark)

42-

The male genital system:

Produces sperms and secrets male hormones.

The female genital system:

Produces the ova and the female sex hormones, besides providing a safe place for completion of fertilization and embryo development till birth.

(Page 59 and 62)

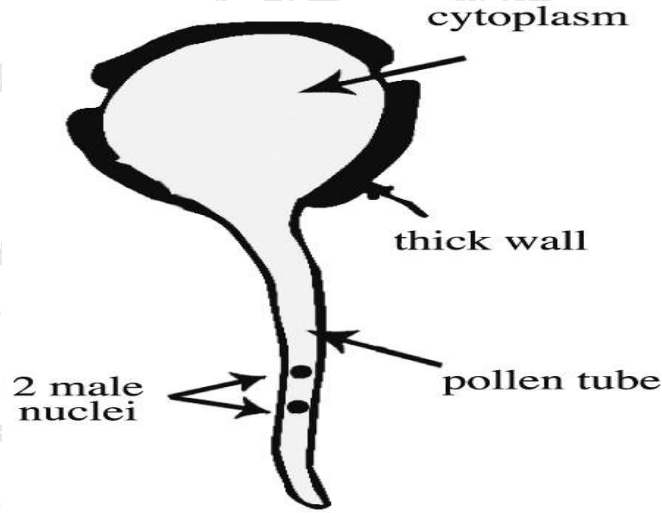
(one mark)

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النموذج (أ)

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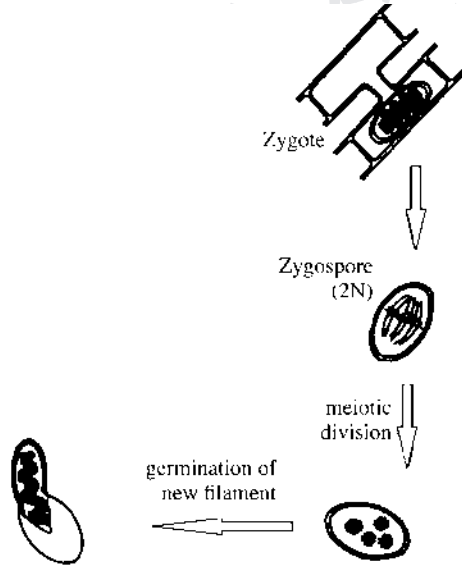
43-(A) or (B)

(A)



or

(B)



(Page 56 & 47) (Two marks)

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44-

1st) Cartiliginous joints.

(Page 11)

2nd) The movements of the body will be not allowed and very hard.

(Page 11)

3rd) The structure no. (2) obtains its food and oxygen needed from the bone cells by diffusion.

(Page 10)

4th) Protect the spinal cord and help in the movement of the head and the upper body parts.

(Page 7)

(Two marks)

45-

1st)

5...AUG – AGG – AUG – AGG - UAA... 3

(one mark)

2nd) 4 Amino acids.

(½ mark)

3rd) 2 tRNA.

(½ mark)

(Page 134) (Two marks)