Set-II | **Final Examination-2020-21** | L-40

Biology

Time 3 hrs. | **Class 11** | M. M. 70

Section – A

1 What are called Gemmae ?

2 Define Systematics.

3 What is meant by phylogenetic classification?

4 What is centromere?

5 What are Radula ?

6 Define aestivation.

7 Starch gives positive iodine test but cellulose does not, why ?

8 Write the role of vasopressin.

9 Which plant hormone is synthesized in large amounts by tissuse undergoing senescence and ripening fruits?

10 Define Residual volume.

11 Assertion – Meiotic division results in the production of four dissimilar cells.

Reason-Synapsis occurs during zygote of meiosis.

12 Assertion – Activity of an enzyme is pH dependent.

Reason-Change in pH affects the solubility of the enzymes in water.

13 Assertion – A cell membrane shows fluid behaviour.

Reason – A membrane is mosaic or composite of diverse lipids and proteins.

14 Assertion – Haemoglobin is an oxygen Carrier.

Reason – Oxygen binds to amino of haemoglobin.

P. T. O.

15 Blood exhibits coagulation or clotting in response to an injury or trauma. This is a mechanism to prevent excessive loss of blood from the body. You would have observed a dark reddish brown scum formed at the site of a cut or an injury over a period of time. It is a clot or coagulum formed mainly of a network of threads called fibrins in which dead and damaged formed elements of blood are trapped. Fibrin are formed by the conversion of inactive fibrinogen in the plasma by the enzyme thrombin. Thrombins in turn are formed from another inactive substance present in the plasma called prothrombin. An enzyme complex thrombokinase, is required for the above reaction. This complex is formed by a series of linked enzymatic reactions (cascade process) involving a number of factors present in the plasma in an inactive state. An injury or trauma stimulates the platelets in the blood to release certain factors which activate the mechanism of coagulation. Calcium ions play an important role in coagulation.

Answer the following questions : 4

(a) What is scum ?

(b) How are fibrins formed?

(c) What is the cascade process ?

(d) Which ion plays an important role in coagulation ?

16 The JGA plays a complex regulatory role. A fall in glomerular blood flow / glomerular blood pressure / GFR can activate the JG cells to release renin which converts angiotensinogen in blood to angiotensinogen I and further to angiotensin II. Angiotensin II, being a powerful vasoconstrictor, increases the glomerular blood and thereby GFR. Angiotensin II also activates the adrenal cortex to release aldosterone. Aldosterone causes reabsorption of sodium ions and water from the distal part of the tubule.

This also leads to an increase in blood pressure and GFR. This complex mechanism is known as Renin-Angiotensin mechanism.

An increase in blood flow to the atria of the heart can cause release of Atrial- natriuretic factor (ANF). ANF can cause vasodilation and thereby decreases the blood pressure. The ANF mechanism. Therefore acts as a check on the renin-angiotensin mechanism.

Answer the following questions :

(a) How do JGA cells increase the GFR ?

(b) Write the role of aldosterone.

(c) Write the role of Angiotensin I and Angiotensin II

(d) What acts as a check on the Renin-angiotensin mechanism.

Section – B

17 Explain only diagrammatically the different types of chromosomes on the basis of the position of centromere.

18 What does the term 'algal bloom' signify

19 Draw flowchart showing Haplontic type of life cycle.

20 Write two differences between red and white muscles.

21 How does Cytokinesis in plant cells differ from that in animal cells?

22 Describe in brief structure and functioning of ATP synthese.

23 Which plant hormone is called stress hormone and why ?

24 What is called the oxygen dissociation curve ? Write it's significance.

25 Describe each : $9 \times 2 = 18$

(a) Resting Potential (b) Synaptic cleft.

Section – C

26 Draw labelled diagram showing nephron.

27 Describe each :

(a) Actinomorphic (b) Zygomorphic (c) Scutellum

28 Draw flowchart showing Z scheme of light reaction.

29 (a) Sino-atrial node is called pacemaker of our heart. Why ?

(b) Why do we call our heart myogenic?

30 (a) Which hormone is called emergency hormones or hormones of flight in our body and why ?

(b) Name the hormone secreted by the atrial wall of our heart and write it's function. 5×3 = 15

Section – D

31 (a) What is known as a competitive inhibitor ? Give an example. 2+3

(b) Describe each – (i) Synapsis (ii) Bivalent (iii) Chiasmata

Or

(a) Explain how enzymes increase the rate of reaction? 2+3

(b) Explain three phases of interphase in brief.

32 (a) Write a short note on Kranz anatomy.

(b) Expand the terms EP and TCA.

Or

(a) Why are C4 plants more economical than C3 plants?

(b) Write any three assumptions that are followed while calculation of the net gain of ATP for every glucose. 2+3

33 (a) Explain the structure of Myofilament in detail.

(b) What are Schwann cells ? Write their role. 3+2

Or

(a) Draw labelled diagram showing axon terminal and synapse.

(b) Explain the structure of Myosin monomer (meromyosin). 3+2