

Youva Academy

Maharashtra state Board sample paper 2019

2019

Biology

By Rajesh shah

98, Gajanan Nagar, Electronic Zone Hingna Road, Nagpur 16

Helpdesk: 9405147634, 9405147662, 7350586662

For more information log on to : www.youvaacademy.com

Youva Academy

BIOLOGY (56) - SET-I

Time : 3 hrs

Std.: XII

Max.Marks : 70

Note:-

- (i) All the questions are compulsory.
- (ii) Draw neat, labelled diagrams wherever necessary.
- (iii) Question paper consists of 30 questions divided into **FOUR** sections, namely A, B, C and D.
- (iv) **Section A** : Select and write the most appropriate answer from the given alternatives for Q.No.1 to 4 of **multiple choice** type questions carrying **one mark** each and Q.No.5 to 8 are **very short answer** type of questions carrying **one mark** each.
- (v) **Section B** contains Q.No.9 to 18 of **short answer** type questions carrying **two marks** each. Internal choice is provided to **only one** question.
- (vi) **Section C** contains Q.No.19 to 27 of **short answer** type questions carrying **three marks** each. Internal choice is provided to **only one** question.
- (vii) **Section D** contains Q.No.28 to 30 of **long answer** type questions carrying **five marks** each. Internal choice is provided to **each** question.
- (viii) For each **MCQ**, correct answer must be written along with its alphabet, e.g. (a) / (b) / (c) / (d)
- (ix) In case of **MCQs**. (i.e.Q.1 to Q.4) evaluation would be done for the **first attempt** only.
- (x) Start each section on new page.
- (xi) Figures to the right indicate full marks.

SECTION - A

- Q.1. The ectomycorrhizae form on the root surface. (1)
- | | |
|---------------|-------------|
| a. root tuber | b. mantle |
| c. root hair | d. vesicles |
- Q.2. During respiration, pyruvate is formed (1)
- | |
|---|
| a. when oxygen takes part in the process. |
| b. when oxygen does not take part in the process. |
| c. irrespective of oxygen taking part in the process. |
| d. when mitochondria take part in the process. |
- Q.3. The auriculo- ventricular valves need to close to prevent the backflow. But the ventricular pumping is so forceful that these valves need additional support to withstand this force. This support is provided by some special tendons. Which are those tendons? (1)
- | | |
|---------------------|---------------------|
| a. Purkinje fibres | b. chordae tendinae |
| c. Achilles tendons | d. epicardium |
- Q.4. The interaction between ruminants and the bacteria in their intestine is (1)
- | | |
|-----------------|---------------|
| a. predation | b. parasitism |
| c. commensalism | d. mutualism |

- Q.5. Explain how biofortification as a strategy is used for dealing with deficiencies of micronutrients in the developing world. (1)
- Q.6. What are flocs used in secondary sewage treatment? (1)
- Q.7. When carbohydrates are completely oxidized during respiration, what is the RQ and why? (1)
- Q.8. Ureters open in the urinary bladder but its backflow has to be prevented. How is it achieved? (1)

SECTION - B

- Q.9. Explain with suitable example somatic hybridization as an application of tissue culture. (2)
- Q.10. A farmer found more demand for pink colored *Mirabilis* flower. Explain the pattern of inheritance which will help him achieve this. (2)
- Q.11. Draw diagram of hairpin model of t-RNA, label its CCA end. What is the role of CCA end? (2)
- Q.12. Explain any four characteristics of genetic code. (2)
- Q.13. After performing electrophoresis, scientist felt the need to preserve and document its result. How that can be done by blotting technique and hybridization ? (2)
- Q.14. Tribal people from India have a great contribution in production of lac. But it needs certain trees. Name atleast two such trees which give good yield of lac. How is raw lac purified? (2)
- Q.15. Growing use of addictive substances in adolescents is one of the major concerns for social scientists. The social scientists and psychologists have underlined the role of proper parenting. What is the role of family and society to stop this menace? (2)

OR

What is serology? In ABO system of blood group, how the blood groups are determined by antigens?

- Q.16. Lymph nodes are known for their role in production of lymphocytes. What is their other role in providing immunity? How are lymph nodes arranged in the body? (2)
- Q.17. A panel of planning commission experts to discuss the infrastructural needs for years to come. Will the number of people belonging to different age groups help them? Explain how? (2)
- Q.18. Draw the diagram of unfertilized ovum. Label zona pellucida in it and give its role in the oviduct. (2)

SECTION-C

- Q.19. What is test cross? Explain its significance with graphic representation. (3)
- Q.20. For transfer of small amount of genetic material from one bacterium to another,

- virus can be used as vector. How can this be achieved for replication of viral DNA? (3)
- Q.21. Draw a diagram of F_1 particle. With the help of a diagrammatic representation, illustrate the major phase of respiration occurring in it. (3)
- Q.22. Draw a diagram of pyramid of energy. In the ecosystem, the energy flow is unidirectional. Explain. (3)
- Q.23. Certain genes located on chromosome 11 and 16 were found to be faulty. This resulted in deficiency in synthesis of beta globin and alpha globin chains. What is the name of this disease? Give its two symptoms. (3)
- Q.24. Draw a diagram to show the site of ultrafiltration and explain the process. (3)

OR

- What is dialysis? State the condition in which dialysis treatment is given? Will this be able to replace all kidney functions. Explain.
- Q.25. Coagulation of blood is an important mechanism. Explain its mechanism. What will happen if a person's blood is deficient in Ca^+ ions ? (3)
- Q.26. *Australopithecus* and *Homo erectus* both had erect posture. But why *Homo erectus* is considered more advanced? Give atleast three such differentiating points to illustrate your answer. (3)
- Q.27. How is puberty attained in females? Will a female normally remain reproductively capable even after age 60? If not then what makes her incapable ? (3)

SECTION - D

- Q.28. Suggest the type of photophosphorylation, during which Oxygen is evolved. Explain the process and draw its diagrammatic representation. (5)

OR

- In tropical plants like maize and sugarcane, during light independent reaction, CO_2 is not directly absorbed by RuBisCo. They follow another pathway. Explain that pathway.
- Q.29. Explain three main techniques of artificial methods of vegetative propagation. Write the significance of vegetative propagation. (5)

OR

- Which properties of seed help the distribution and dominance of Angiosperms on the earth.
- Q.30. Each cerebral hemisphere is designed for specific function. Give details of these functions. Support your answer with a well labelled diagram. (5)

OR

In a person, Pars distalis part of the Pituitary gland is not producing hormones in sufficient quantity. Explain the effects it will produce with respect to the different hormones.

98, Gajanan Nagar, Electronic Zone Hingna Road, Nagpur 16
Helpdesk: 9405147634, 9405147662, 7350586662
For more information log on to : www.youvaacademy.com