

GULF SAHODAYA EXAMINATION SAUDI CHAPTER
CLASS: XI FEBRUARY – 2014-2015
BIOTECHNOLOGY

Time allowed: 3 hrs

Total Marks: 70

General Instructions:

- (1) All questions are compulsory.
- (2) There is no overall choice. However internal choice has been provided in one question of two marks and two questions of five marks. You have to attempt only one of the choices in such questions. Question paper contains four sections.
- (3) Question numbers 1 to 6 are very short answer questions, carrying 1 mark each.
- (4) Question numbers 7 to 14 are short answer questions, carrying 2 marks each.
- (5) Question numbers 15 to 25 are also short answer questions, but carrying 3 marks each.
- (6) Question numbers 26 to 28 are long answer questions, carrying 5 marks each.
- (7) Use of calculators is not permitted. However, you may use log tables if necessary

Section – A (1 Mark)

1. Which enzyme catalyzes the reduction of dinitrogen to ammonia? What is it composed of?
2. Differentiate between palisade and spongy mesophyll.
3. Hematoxylin and Eosin is commonly used to stain cells while studying them under a light microscope. Indicate which components are stained by each.
4. List any 2 pillars of GLP.
5. State Mendel's Law of dominance.
6. What do the following notations in a pedigree chart denote:

(a)



(b)



Section – B (2 Marks)

7. Draw a neat and labeled diagram of the internal structure of an ovule.
8. Define the following: (a) hydrophobic interaction.
(b) Isoelectric focusing.

OR

Explain the two techniques based on solubility.

9. What is an inhibitor? Explain with an example.
- 10.(a) Give reason why Calvin cycle is also known as C₃ cycle.
(b) Where does Calvin cycle take place?
- 11.(a) What is meant by triple fusion?
(b) List the function of endosperm.
- 12.(a) Write down any 2 patenting strategies.
(b) Give the equation for growth media used in fermentation process.
13. Distinguish between transition and transversion.
14. Write any 4 differences between lagging and leading strand.

Section – C (3 Marks)

15. Muscle is a tissue, which is unique to animals and plays a leading role in the mobility of animals. Explain.
16. Explain Frederick Griffiths experiment to prove DNA as genetic material..
- 17.(a) Write a note on the reactions followed after a human body is attacked by a pathogen.
(b) Draw a neat labeled diagram of an antibody.
18. Define the terms (a) Central Dogma of life
(b) Okazaki fragments
(c) Semi-conservative DNA replication.
19. How is an ideogram created? Which stages of chromosomes are used in Karyotyping? From where are the cells obtained for karyotyping?
20. Enlist the steps involved in inducing auxotrophic mutation in bacteria.
21. With a help of a diagram explain sex determination in human beings.
22. (a) Name and explain the test done to estimate the presence of pentoses in RNA and DNA.
(b) Give reason why sucrose is not a reducing sugar.
23. What are the modifications done to mRNA before being transferred to cytoplasm?
24. Explain the principle involved in Gel permeation.
- 25.(a) Explain Electron microscopy.
(b) Name two dyes used in Electron microscopy.

Section – D (5 Marks)

26. (a) List six prominent features of the genetic code.
(b). Name and list the role of any 2 enzymes involved in DNA replication.

27. (a) Write a short note on the key enzyme involved in transcription.
(b). Describe the mechanism of Transcription.

OR

- (a). Write a short note on any 3 important parts of a fermenter.
(b). Sketch out The Embden-Meyerhof-Parnas pathway of glucose catabolism.

28. Describe the different methods through which growth of microbial cells can be assessed.

OR

Explain different types of simple and complex plant tissues.