

RAMAKRISHNA MISSION VIDYAMANDIRA

Belur Math, Howrah – 711 202

ADMISSION TEST – 2019 MICROBIOLOGY (Honours)

Date : 19-06-2019

Full Marks : 50

Time: 1.00 p.m – 2.00 p.m

Instructions for the candidate

Answer all the questions given below. Each MCQ type question carries **2 mark**. **½ mark** will be deducted for one wrong answer. Each Assertion type question carries **2 marks**. **½ mark** will be deducted for one wrong answer. Shade or darken the correct option on the **OMR SHEET** using either Black or Blue ink. The shades must be very clear and non-overlapping and if it is smudgy or not clear, no marks will be awarded.

A. MCQ type questions

1. The following table summarizes the differences between light and dark reactions

	Light reactions	Dark reactions
(i)	These are also called as biosynthetic phase	These are also called as photochemical phase
(ii)	These reactions occur over thylakoids	These reactions occur in stroma of chloroplasts
(iii)	These produce assimilatory power i.e., NADPH ₂ and ATP	These consume NADPH ₂ and ATP
(iv)	These are directly dependant on light	These depend upon the products synthesized during light reactions

Which of the above pairs of differences is/are incorrect?

- (a) (i) and (iv) (b) (iii) and (iv) (c) only (iv) (d) only (i)

2. The process of crossing over during cell division is assisted by which of the following enzymes?

- (a) Endonuclease (b) Polymerase (c) Ligase (d) both (a) and (c)

3. The concept of *contagium vivum fluidum* was proposed by

- (a) D.J. Ivanowsky (b) M.W. Beijerinck (c) Stanley (d) Robert Hooke

4. Arrange the following steps in a correct sequence as per Gram's staining technique :

- (i) Treatment with 0.5% iodine solution
(ii) Washing with water
(iii) Treatment with absolute alcohol/acetone
(iv) Staining with weak alkaline solution of crystal violet

12. Methyl guanosine triphosphate is added to the 5' end of hnRNA in a process of
 (a) splicing (b) capping (c) tailing (d) none of these
13. The common cold is caused by
 (a) Rhinovirus (b) *Streptococcus pneumoniae*
 (c) *Salmonella typhimurium* (d) *Plasmodium vivax*
14. During the life cycle of *Plasmodium*, sexual reproduction takes place in which of the following hosts?
 (a) human (b) female Anopheles mosquito (c) male Anopheles mosquito (d) both (a) and (b)
15. The most abundant antibody produced against allergens is
 (a) IgE (b) IgA (c) IgG (d) IgM
16. Which of the following disease cannot be cured by taking antibiotics?
 (a) Plague (b) Amoebiasis (c) Leprosy (d) Whooping cough
17. Black rust of wheat is caused by
 (a) *Puccinia* (b) *Albugo* (c) *Ustilago* (d) *Cystopus*
18. Which of the following is not used as a biopesticide?
 (a) *Trichoderma harzianum*
 (b) Nucleopolyhedrovirus
 (c) *Xanthomonas campestris*
 (d) *Bacillus thuringiensis*
19. The purpose of biological treatment of waste water is to
 (a) reduce BOD (b) increase BOD (c) reduce sedimentation (d) increase sedimentation
20. Methanogens growing anaerobically on cellulosic material produce
 (a) CH₄ (b) CH₄ and CO₂ (c) CH₄ and H₂ (d) CH₄, CO₂ and H₂

B. Assertion and Reason type questions

The following questions consist of two statements one labelled **ASSERTION (A)** and another labelled **REASON (R)**. Select the correct answers to these questions from the codes given below:

- (a) Both **A** and **R** are true and **R** is the correct explanation of **A**.
 (b) Both **A** and **R** are true but **R** is not the correct explanation of **A**
 (c) **A** is true but **R** is false
 (d) **A** and **R** are false
21. Assertion: Genetic engineering requires both nucleases and ligases
 Reason: ligases produce the nick in the recombinant DNA molecule.

22. Assertion: All immunoglobulin molecules have a basic structure composed of four polypeptide chains.

Reason: The polypeptide chains consist of two identical heavy and light chain connected by disulphide bonds.

23. Assertion: The arrangement of axonemal microtubules in cilia and flagella is called 9+2 array

Reason: The axoneme usually has nine pairs or doublets of randomly arranged peripheral microtubules, and a pair of centrally located microtubules.

24. Assertion: Hydrolases are the enzymes which catalyse the hydrolysis of ester, ether, peptide, glycosidic, C-C or C-N etc; bonds.

Reason: Lyases are the enzymes catalysing the linking together of 2 compounds like joining of C-O, C-N, P-O etc; bonds.

25. Assertion: *Escherichia coli*, *Shigella* sp. and *Salmonella* sp. are all responsible for diarrhoeal diseases

Reason : Dehydration is common to all types of diarrhoeal diseases and adequate supply of fluids and electrolytes should be ensured.

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