

Test Booklet

Series

A

Test Booklet No.

**Test Booklet
MICROBIOLOGY**

Name of Applicant Answer Sheet No.

Applicant Roll No. : Signature of Applicant :

Date of Examination: Signature of the Invigilator(s)
1.

Time of Examination : 2.

Duration : 1½ Hours]

[Maximum Marks : 70

IMPORTANT INSTRUCTIONS

- (i) The question paper is in the form of Test-Booklet containing **70 (Seventy)** questions. All questions are compulsory. Each question carries four answers marked (A), (B), (C) and (D), out of which only one is correct. Choose the correct option or the most appropriate option.
- (ii) On receipt of the Test-Booklet (Question Paper), the candidate should immediately check it and ensure that it contains all the pages, i.e., **70** questions. Discrepancy, if any, should be reported by the candidate to the invigilator immediately after receiving the Test-Booklet.
- (iii) A separate Answer-Sheet is provided with the Test-Booklet/Question Paper. On this sheet there are **70** rows containing four circles each. One row pertains to one question.
- (iv) The candidate should write his/her Roll number at the places provided on the cover page of the Test-Booklet/Question Paper and on the Answer-Sheet and **NOWHERE ELSE**.
- (v) No second Test-Booklet/Question Paper and Answer-Sheet will be given to a candidate. The candidates are advised to be careful in handling it and writing the answer on the Answer-Sheet.
- (vi) For every correct answer of the question **One (1) mark will be awarded**.
- (vii) Marking shall be done only on the basis of answers responded on the Answer-Sheet.
- (viii) To mark the answer on the Answer-Sheet, candidate should **darken** the appropriate circle in the row of each question with Blue or Black pen.
- (ix) For each question only **one** circle should be **darkened** as a mark of the answer adopted by the candidate. If more than one circle for the question are found darkened or with one black circle any other circle carries any mark, the answer will be treated as incorrect.
- (x) The candidates should not remove any paper from the Test-Booklet/Question Paper. Attempting to remove any paper shall be liable to be punished for use of unfair means.
- (xi) Rough work may be done on the blank space provided in the Test-Booklet/Question Paper only.
- (xii) *Mobile phones (even in Switch-off mode) and such other communication/programmable devices are not allowed inside the examination hall.*
- (xiii) No candidate shall be permitted to leave the examination hall before the expiry of the time.

DO NOT OPEN THIS QUESTION BOOKLET UNTIL ASKED TO DO SO.

PART-A

1. Select the option that is **nearest in meaning** to the underlined word.

She had no idea what made him angry in one minute and joyial the next.

- (A) aggrieved (B) melancholic
(C) doleful (D) mirthful

2. Select the option that is **opposite in meaning** to the underlined word.

Amid commotion the leader and his supporters remained passive.

- (A) quietude (B) uproar
(C) tempest (D) stir

3. Given below sentence has four sequences namely (A), (B), (C) and (D). You are required to re-arrange the jumbled parts of the sentence correctly.

ripping roofs off houses and raising fears of coast of Madagascar in the early hours,

P

Q

cyclone Emnati crashed into the southeastern flooding and food shortages in the region

R

S

The correct sequence should be :

- (A) SPRQ (B) RPSQ
(C) RQPS (D) PRSQ

4. In the following question, a sentence has been given in Direct/Indirect speech. Out of the four alternatives suggested, select the one which best expresses the same sentence in Indirect/Direct speech.

My sister said to me, "You didn't help me yesterday so I will not help you now."

- (A) My sister said to me that I had not helped her the day before so she would not help me then.
(B) My sister said to me that I have not helped her the day before so she would not help me now.
(C) My sister said to me that I have not helped her yesterday so she would not help me then.
(D) My sister said to me that I had not helped her yesterday so she would not help me now.

5. In the following question, the sentence given with blank is to be filled by selecting the most appropriate option.

Vivekananda _____ the young to “arise” and “awake”, to reject all doctrines and dogmas that were based on superstition and prejudice.

- (A) flattered (B) lauded
(C) exhorted (D) commended

6. Fill in the blank with appropriate phrasal verb form the alternatives given below.

As she became tired, errors began to _____ her work,

- (A) creep with (B) creep into
(C) creep off (D) creep up

7. M is taller than S, who is shorter than R. Vp is taller than Ak. Ah is shorter than Vk. Neither Vp nor Vk is tallest. If R is standing second in decreasing order of height, who will stand in the middle in the group of these seven persons?

- (A) Vp (B) Vp or Vk
(C) Ah (D) Cannot be determined

8. A series is given, with one term missing. Choose the correct alternative from the given ones that will complete the series.

CL, HQ, MV, ?

- (A) RA (B) QZ
(C) SB (D) TC

9. Select the rest option for ? from the given alternatives.

MOLTU : ? :: HOPE : IPQF

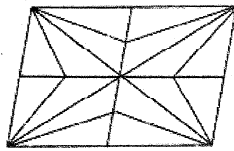
- (A) MPNUV (B) NPMUV
(C) NPMVU (D) MPNVU

10. Choose the correct alternative from the given ones that will complete the below series :

$$\frac{W}{S}, \frac{U}{O}, \frac{S}{K}, \frac{Q}{G}, \dots\dots\dots$$

- (A) P/R (B) C/O
(C) R/J (D) O/C

11. How many triangles are there in the given figure?



- (A) 24 (B) 28
(C) 36 (D) 32

12. The following question consists of one statement followed by two conclusions. You have to decide which one of them can be followed.

Statement :

Only smart and intelligent people are invited to the conference,
Shakti has been invited to attend the conference.

Conclusions :

- I. Shakti is smart.
II. Shakti is intelligent,
(A) Either conclusion I or II is valid.
(B) Only conclusion II is valid.
(C) Only conclusion I is valid.
(D) Both the conclusions are valid

17. What is the S.I. unit of electric charge?
- (A) Ampere (B) Ohm
(C) Volt (D) Coulomb
18. Which among the following is the northern most geographical location?
- (A) New Delhi (B) Kathmandu
(C) Thimpu (D) Dhaka
19. During recent elections, in which Lok Sabha constituency did NOTA create a record with 2.18 lakh voters opting for it?
- (A) Bhopal (B) Jabalpur
(C) Gwalior (D) Indore
20. Who became the first Indian male wrestler to qualify for the 2024 Paris Olympics?
- (A) Ravi Kumar Dahiya (B) Bajrang Punia
(C) Aman Sehrawat (D) Deepak Punia

PART-B

21. Identify the eukaryotic organism
- (A) Salmonella (B) Rhizobium
(C) Scenedesmus (D) Lactobacillus
22. A farmer crossed a pure homozygous tall pea plant with heterozygous tall pea plant. In the progeny what percentage of dwarf plants can be seen.
- (A) 0% (B) 25%
(C) 50% (D) 100%
23. Which of the following is absent in eubacterial cell wall?
- (A) Pseudomurein (B) Lipopolysaccharide
(C) Teichoic acid (D) L-Lys

24. Through a transport protein, 2 different molecules can move in one direction together. If only one is present, the movement is not there. This is an example of
- (A) Passive transport (B) Group translocation
(C) Uniport (D) Symport
25. Episome is formed when
- (A) Plasmid replicates multiple times
(B) Plasmid fuses with main genome
(C) Plasmid breaks into smaller fragments
(D) Plasmid is lost from the cell
26. Which of the following identifies with flagellar movement?
- (A) Gliding motion (B) Run and tumble
(C) Swarming motility (D) Corkscrew motion
27. Identify the palindromic sequence
- (A) AGTCCCACGT (B) ACTCAAGTCA
(C) AGTCAACTGA (D) AATCGATTAC
28. The overhanging ends created by staggered cut of restriction digestion enzyme are known as
- (A) Ligands (B) Blunt ends
(C) Sticky ends (D) None of the above
29. In a fermenter, air passes into the vessel through
- (A) Sparger (B) Impeller
(C) Baffle (D) Filter

30. Penicillin is obtained from
- (A) *Penicillium digitatum* (B) *Penicillium roqueforti*
(C) *Penicillium chrysogenum* (D) *Penicillium marneffeii*
31. Hanging drop method was invented by
- (A) Louis Pasteur (B) Sergei Winogradsky
(C) Robert Koch (D) Ferdinand Cohn
32. BOD of water stream is an indicator of
- (A) Inorganic pollutants (B) Organochlorine pollutants
(C) Organic decomposable pollutants (D) Dissolved oxygen
33. Antiseptic surgery was developed by
- (A) Joseph Lister (B) Louis Pasteur
(C) Paul Ehrlich (D) None of the above
34. Identify the differential medium from the following"
- (A) Pike's medium (B) Czapek dox medium
(C) Luria Bertani medium (D) MacConkey medium
35. Which of the following is not identified as a member of protists?
- (A) Red algae (B) Diatoms
(C) Euglena (D) Blue green algae
36. Substitution of purine by pyrimidine results in
- (A) Point mutation (B) Transversion
(C) Nucleotide substitution (D) All of the above

37. Function of Rec BCD protein is to
- (A) Help in DNA replication (B) DNA repair
(C) DNA recombination (D) DNA stabilization
38. Which type of mutation cannot be transferred to the next generation?
- (A) Point mutation (B) Somatic cell mutation
(C) Mitochondrial mutation (D) Germ cell mutations
39. Which of the following disease is not caused by chromosomal mutations?
- (A) Cri du chat (B) Down syndrome
(C) Sickle cell anemia (D) None of the above
40. Once a protein is tagged with ubiquitin, it will be
- (A) Transported outside the cell (B) Transported to the Golgi bodies
(C) Taken for degradation (D) None of the above
41. Which proteins do not facilitate endocytosis?
- (A) Flagellin (B) Caveolin
(C) Clathrin (D) Actin
42. ATP production without oxidative phosphorylation can be carried out in the following organelle
- (A) Chloroplast (B) Hydrogenosome
(C) Mitochondria (D) All of the above
43. Identify the reproduction process where organism develops from small pieces of original body
- (A) Akinetes (B) Propagules
(C) Hormogonia (D) Budding

44. Six membered sugar rings are called as
- (A) Pyranoses (B) Aldoses
(C) Hexoses (D) Furanoses
45. Partial hydrolysis of starch results in formation of
- (A) Inulin (B) Dextrin
(C) Glucose (D) Disaccharide
46. Which of the following are compound lipids?
- (A) Cholesterol (B) Triacylglycerol
(C) Phosphatidic acid (D) None of the above
47. Essential fatty acids include
- (A) Linoleic acid (B) Linolenic acid
(C) Arachidonic acid (D) All of the above
48. At which pH the amino acid has no net charge
- (A) Amphoteric pH (B) Acid pH
(C) Isoelectric pH (D) Neutral pH
49. Which of the following amino acids contains sulfur side chains?
- (A) Cysteine (B) Serine
(C) Leucine (D) Alanine
50. To visualize the internal structure of a cell, which of the following microscope is used?
- (A) Scanning electron microscope (B) Transmission electron microscope
(C) Atomic force microscopy (D) Phase contrast microscopy

51. Which of the following antibiotic damages the cytoplasmic membrane?
- (A) Cephalosporin (B) Polymyxin
(C) Streptomycin (D) Tetracycline
52. Proteinaceous capsule is seen in
- (A) *Vibrio cholerae* (B) *Bacillus anthracis*
(C) *Enterobacter* (D) *Staphylococcus aureus*
53. Which morphology is unique to archaeal cells?
- (A) Filamentous (B) Rod
(C) Coccus (D) Quadrat
54. In glycolysis, ATP production occurs due to
- (A) Proton motive force (B) Breakdown of high energy compounds
(C) Oxidative phosphorylation (D) None of the above
55. Enzyme responsible for unwinding the DNA strand is
- (A) Helicase (B) Gyrase
(C) Topoisomerase (D) None of the following
56. An example of Type I hypersensitivity reaction is
- (A) Allergy (B) Anaphylactic shock
(C) Both of the above (D) None of the above
57. How many isotopes of human IgG are there?
- (A) 2 (B) 3
(C) 4 (D) 6

58. Identify the condition where the progeny of B+ mother and B+ father may be O+
- (A) When both are heterozygous
 - (B) When mother is heterozygous but father is homozygous
 - (C) When father is heterozygous but mother is homozygous
 - (D) Condition cannot arise
59. If a non-protein molecule binds to the aminoacyl t- RNA binding site, then
- (A) Transcription is blocked
 - (B) Translation is blocked
 - (C) Translation is initiated
 - (D) Transcription is initiated
60. Substrate A and substrate B were catalysed by an enzyme. However, Km value for substrate B was lower than that of substrate A. This shows that
- (A) The enzyme has higher affinity for A
 - (B) The enzyme has higher affinity for B
 - (C) The enzyme has equal affinity for A and B
 - (D) None of the above
61. Which of the following is not a genetic disorder?
- (A) Down syndrome
 - (B) Sickle cell anaemia
 - (C) Kuru
 - (D) Cystic fibrosis
62. The progeny of a cross between a red flowering plant of a species with a white flowering plant of the same species produces flowers with mixed red and white pattern. When this plant is crossed over with the white flowering variety, progeny with only white flowers and with mix of both colours were noted. Identify the possible reason
- (A) Incomplete dominance
 - (B) Codominance
 - (C) Epistasis
 - (D) Mutation
63. Which of the following is the name of a sexual fruiting body?
- (A) Perithecium
 - (B) Acervulus
 - (C) Pycnidium
 - (D) None of the above

64. Which of the following is not a yeast?
- (A) Candida (B) Pichia
(C) Saccharomyces (D) Humicola
65. Which of the following is an enveloped virus?
- (A) T4 (B) Parvovirus
(C) Lambda virus (D) Influenza virus
66. Which of the following equipment sterilizes using moist heat?
- (A) Autoclave (B) Oven
(C) Desiccation (D) Incineration
67. Exponential phase in growth curve is supported by
- (A) Nutrients (B) Temperature
(C) Bacterial cell number (D) Pressure
68. E.coli is being grown in a medium for 12h. If generation time is 0.5 hr, then division rate will be
- (A) 0.5 per hour (B) 2 per hour
(C) 3 per hour (D) 4 per hour
69. Which of the following strategies are not found in bacterial replication?
- (A) Binary fission (B) Budding
(C) Nuclear fusion (D) Multiple fission
70. Endospores are formed by
- (A) Clostridium (B) Hyphomicrobium
(C) Nocardia (D) Pseudomonas

ROUGH WORK

ROUGH WORK