

11P/292/23

1951

Set No - 1

Question Booklet No.

(To be filled up by the candidate by *blue/black ball-point pen*)

Roll No.

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Roll No.

(Write the digits in words)

Serial No. of Answer Sheet

Day and Date

.....
(Signature of Invigilator)

INSTRUCTIONS TO CANDIDATES

(Use only *blue/black ball-point pen* in the space above and on both sides of the Answer Sheet)

1. Within 10 minutes of the issue of the Question Booklet, check the Question Booklet to ensure that it contains all the pages in correct sequence and that no page/question is missing. In case of faulty Question Booklet bring it to the notice of the Superintendent/Invigilators immediately to obtain a fresh Question Booklet.
2. Do not bring any loose paper, written or blank, inside the Examination Hall *except the Admit Card without its envelope*.
3. A separate Answer Sheet is given. *It should not be folded or mutilated. A second Answer Sheet shall not be provided. Only the Answer Sheet will be evaluated.*
4. Write your *Roll Number and Serial Number of the Answer Sheet by pen* in the space provided above.
5. *On the front page of the Answer Sheet, write by pen your Roll Number in the space provided at the top, and by darkening the circles at the bottom. Also, wherever applicable, write the Question Booklet Number and the Set Number in appropriate places.*
6. No overwriting is allowed in the entries of Roll No., Question Booklet No. and Set No. (if any) on OMR sheet and Roll No. and OMR sheet No. on the Question Booklet.
7. Any changes in the aforesaid entries is to be verified by the invigilator, otherwise it will be taken as unfair means.
8. Each question in this Booklet is followed by four alternative answers. *For each question, you are to record the correct option on the Answer Sheet by darkening the appropriate circle in the corresponding row of the Answer Sheet, by pen as mentioned in the guidelines given on the first page of the Answer Sheet.*
9. For each question, darken only one circle on the Answer Sheet. If you darken more than one circle or darken a circle partially, the answer will be treated as incorrect.
10. *Note that the answer once filled in ink cannot be changed.* If you *do not wish to attempt* a question, leave all the circles in the corresponding row blank (such question will be awarded zero marks).
11. For rough work, use the inner back page of the title cover and the blank page at the end of this Booklet.
12. Deposit *only the OMR Answer Sheet* at the end of the Test.
13. You are not permitted to leave the Examination Hall until the end of the Test.
14. If a candidate attempts to use any form of unfair means, he/she shall be liable to such punishment as the University may determine and impose on him/her.

[उपर्युक्त निर्देश हिन्दी में अन्तिम आवरण-पृष्ठ पर दिये गये हैं ।]

Total No. of Printed Pages : 18

No. of Questions : 150

Time : 2½ Hours]

[Full Marks : 450

Note : (i) Attempt as many questions as you can. Each question carries 3 (three) marks. 1 (One) mark will be deducted for each incorrect answer. Zero mark will be awarded for each unattempted question.

(ii) If more than one alternative answers seem to be approximate to the correct answer, choose the closest one.

1. On what evidence did Aristotle hypothesize on spontaneous generation?
 - (1) animalcules
 - (2) experiments with broth
 - (3) his belief in magic
 - (4) observing living things seemingly arise from non-living matter
2. John Snow made what important contribution to microbiology?
 - (1) discovered the vaccine to cure cholera
 - (2) was an English physician
 - (3) mapped cholera cases in London and found their source
 - (4) discovered how to stain bacteria so they could be studied
3. Who developed postulates to demonstrate that microorganisms caused disease ?
 - (1) Semmelweis
 - (2) Metchnikoff
 - (3) Koch
 - (4) Chamberland
4. Christian Gram solved what important problem faced by microbiologists ?
 - (1) how to kill Gram + and Gram – microbes
 - (2) how to view microbes and distinguish between two main types
 - (3) how to prevent the spread of infectious disease
 - (4) how to make microbes more attractive through the use of colorful dyes

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5. Endospores are :
- (1) reproductive structures of fungus
 - (2) living vegetative cells of bacteria
 - (3) dormant structures produced by stressed bacteria
 - (4) a type of vaccine
6. Genetic recombination occurs in bacteria through the transfer of
- (1) pili
 - (2) plasmids
 - (3) endospores
 - (4) autospores
7. Any process that results in the integration of new combinations of genes together in a single cell is :
- (1) genetic recombination
 - (2) fusion
 - (3) genetic fission
 - (4) allelotyping
8. Gene transfer in bacteria by transformation has the following characteristics :
- (1) a majority of the donor genes are transferred
 - (2) it involves a plasmid
 - (3) it depends on phage infection of the recipient cell
 - (4) it can be carried out using free DNA extracted from the donor
9. A transducing phage :
- (1) contains only viral DNA
 - (2) may contain viral and bacterial DNA
 - (3) is sensitive to DNase
 - (4) can never transfer extrachromosomal genes
10. Which of the following statements is false concerning a mating between F⁺ and F⁻ cell ?
- (1) the F⁻ cell is converted to an F⁺ cell
 - (2) the F⁺ cell is converted to an F⁻ cell
 - (3) chromosomal genes are rarely transferred
 - (4) cell-to-cell contact is always necessary
11. A viroid is made of :
- (1) protein only
 - (2) capsid and genetic material
 - (3) genetic material only
 - (4) a capsid only
12. When a virus invades a bacterium, gets that bacterial cell to make more copies of the virus that eventually burst out of and kill that same bacterial cell, this is called :
- (1) lysogeny
 - (2) lytic replication
 - (3) murder
 - (4) a prion

13. Which of the following is *not* an acellular infectious agent ?
(1) viroid (2) bacteria (3) virus (4) prion
14. When a bacteriophage is integrated into a cellular genome, it is called a :
(1) virulent virus (2) lytic virus
(3) prophage (4) transducing virus
15. The infectious substance of prions is :
(1) protein (2) glycoposphate
(3) RNA (4) DNA
16. The only structural pattern that has been found among isometric viruses is :
(1) icosahedral (2) spherical (3) helical (4) tetrahedral
17. Viruses are considered to be :
(1) non-living (2) primitive precursors of bacteria
(3) a link between life and non-life (4) primitive organisms
18. Which of the following is the arrangement of organisms into groups or taxa ?
(1) nomenclature (2) identification (3) systematics (4) classification
19. Deoxyribose is :
(1) $C_5H_{10}O_5$ (2) $C_5H_{10}O_4$ (3) $C_6H_{12}O_6$ (4) $C_5H_{12}O_6$
20. An amino acid without asymmetrical carbon atom is :
(1) Histidine (2) Threonine (3) Phenylalanine (4) Glycine
21. Decreasing order concentration of minerals inside the cell is :
(1) Ca-K-Na (2) K-Ca-Na (3) K-Na-Ca (4) Na-K-Ca
22. Which one is a lipid ?
(1) Stachyose (2) Lycopene (3) Leucine (4) Sterol
23. Anticodon occurs in :
(1) DNA (2) tRNA (3) mRNA (4) rRNA
24. What is a constituent of natural silk ?
(1) Phosphorus (2) Nitrogen (3) Potassium (4) Magnesium
25. Which enzyme can digest the plant proteins ?
(1) Renin (2) Erepsin (3) Pepsin (4) All the above

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26. Lactate dehydrogenase (LDH) that takes part in catalysis of pyruvate to lactate is an example of :
- (1) Isoenzyme (2) Zymogen (3) Coenzyme (4) Apoenzyme
27. Facultative anaerobes are :
- (1) Strictly aerobes
(2) Aerobes which can respire anaerobically
(3) Strictly anaerobe
(4) Anaerobes which can respire anaerobically
28. Term bacteria was coined by
- (1) Pasteur (2) Kotch (3) Whittakar (4) Ethernberg
29. Mycolic acid occurs in the wall of a pathogen which causes :
- (1) Diptheria (2) Tuberculosis (3) Tetanus (4) Cholera
30. Which of the following is an antifungal drug ?
- (1) Metronidazole (2) Streptomycin
(3) Amphotericin B (4) Tobramycin
31. Rifampicin acts by inhibiting :
- (1) DNA synthesis (2) Protein synthesis
(3) RNA synthesis (4) Cell wall synthesis
32. Biodiesel is produced from fats/oil through a process known as :
- (1) Esterification (2) Hydrolysis
(3) Transesterification (4) Condensation
33. Prednisolon is :
- (1) Antibiotic (2) Steroid (3) Enzyme (4) Vitamin
34. Enzyme immobilization is :
- (1) Conversion of an active enzyme into inactive form
(2) Providing enzyme with protective covering
(3) Changing a soluble enzyme into insoluble state
(4) Changing pH so that enzyme is not able to carry out its function
35. Kohler and Milstein developed biotechnology for :
- (1) Monoclonal antibodies (2) Myelomas
(3) Immobilization of enzymes (4) Lymphocytes

- 36.** Which of the following is an anion exchanger :
- (1) DEAE-Sephadex (2) CM-Sephadex
(3) Cellulose (4) Starch
- 37.** Subunits of ribosomes dissociates from each other, if :
- (1) $Mg^{2+} > 10^{-2} M$ (2) $Na^{+} > 10^{-3} M$
(3) $Mg^{2+} > 10^{-3} M$ (4) $Na^{+} > 10^{-2} M$
- 38.** Gentle treatment of DNA with 1mM HCl leads to :
- (1) Disruption of sugar phosphate backbone
(2) No effect on sugar phosphate backbone
(3) Produce pyrimidine free polynucleotide
(4) No effect on DNA
- 39.** In a peptide nucleic acid (PNA) :
- (1) Sugar is replaced by amino acid
(2) Phosphate group is replaced by amino acid
(3) Sugar- phosphate backbone is replaced by peptide
(4) N-bases are replaced by amino acids
- 40.** A solenoid in a chromosome represents :
- (1) 10 nucleosomes/turn (2) 6 nucleosomes/turn
(3) 8 nucleosomes/turn (4) 12 nucleosomes/turn
- 41.** Toroidal state of supercoiling may exists in :
- (1) negatively supercoiled DNA (2) Positively supercoiled DNA
(3) either (4) None of the above
- 42.** Tus protein :
- (1) is contrahelicase
(2) inhibits ATP dependent DnaB helicase activity
(3) blocks progression of replication fork
(4) all of the above
- 43.** RNase H has :
- (1) exonuclease activity for DNA:RNAhybrids
(2) endonuclease activity for DNA:RNAhybrids
(3) exonuclease activity for RNA:RNAhybrids
(4) endonuclease activity for RNA:RNAhybrids

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44. SOS response can be activated by :
- (1) purine dimmers
 - (2) misincorporation of bases in DNA
 - (3) methylated base
 - (4) quinolone antibiotic induced breaks in DNA
45. In a type of DNA damage, cyclobutyl ring is formed. It is due to :
- (1) bulging due to insertion
 - (2) UV irradiation
 - (3) breaks within deoxyribose ring
 - (4) breaks at phosphodiester bonds
46. Isoschizomers have the same :
- (1) recognition site
 - (2) cleavage site
 - (3) both (1) & (2)
 - (4) Origin
47. Homopolymer tailing is useful in :
- (1) ligation of blunt ends
 - (2) ligation of cohesive ends
 - (3) ligation of single stranded DNA
 - (4) None of the above
48. Insertional inactivation is related to :
- (1) DNA damage and repair
 - (2) screening of recombinants
 - (3) termination of DNA replication
 - (4) translation
49. *DpnI* is the restriction enzyme which recognizes :
- (1) two GC dinucleotides
 - (2) octanucleotide sequence
 - (3) hexanucleotide sequence
 - (4) methylated A residues
50. Rare cutters for mammalian DNA is :
- (1) *Eco RI*
 - (2) *Bam HI*
 - (3) *Bss HII*
 - (4) *Pst I*
51. Which one of the following is the requirement for restriction by a restriction endonuclease type II :
- (1) ATP
 - (2) Mg^{2+}
 - (3) ATP & Mg^{2+}
 - (4) ATP, Mg^{2+} & SAM
52. DNA fragments obtained by direct chemical synthesis can be joined to vector suitably by :
- (1) Homopolymer tailing
 - (2) blunt end ligation
 - (3) linker molecules
 - (4) ligation of cohesive termini

53. Required number of recombinants, to achieve 95% probability of including any particular sequence in a random human genomic DNA library of 20kb fragment size is (size of human genome = 2.8×10^6 kb) :
- (1) 4.2×10^5 (2) 6.5×10^6 (3) 4.5×10^6 (4) 1.4×10^5
54. Which one of the following is *not* a limitation for cDNA cloning ?
- (1) larger mRNA are difficult to deal
 (2) all RNAs do not possess 3' poly(A) tail
 (3) cDNA libraries are rich in 3' -terminal sequence
 (4) presence of poly (A) tails in mRNAs
55. DNA chimaeras is a term corresponding to :
- (1) multiple copies of DNA (2) DNA:RNA hybrids
 (3) gene manipulation (4) circular DNA
56. Stringency control during hybridization of nucleic acids on membrane is commonly controlled by :
- (1) temperature (2) time
 (3) concentration of probe (4) length of probe
57. Organisms growing under high pressure have increased proportion in their cytoplasmic membrane of :
- (1) Protein (2) Saturated fatty acids
 (3) lipids (4) Unsaturated fatty acids
58. OmpH protein is synthesized in :
- (1) Barophiles (2) Thermophiles (3) Acidophiles (4) Alkalophiles
59. Trophosome tissue of tube worm living near thermal vents harbour symbiotic :
- (1) Hydrogen oxidizing bacteria (2) Sulfur oxidizing bacteria
 (3) Nitrifying bacteria (4) Iron oxidizing bacteria
60. Which one of the following plays role in "C-cycle" under anoxic conditions :
- (1) Homoacetogen (2) methanotrophs
 (3) Chemolithotrophs (4) Green algae
61. ΔG° for overall reaction of methanogenesis ($4\text{H}_2 + \text{CO}_2 \rightarrow \text{CH}_4 + 2\text{H}_2\text{O}$) is :
- (1) 130.7 kJ/reaction (2) -130.7 kJ/reaction
 (3) 143.8 kJ/reaction (4) -143.8 kJ/reaction

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62. bacterial fermentation of glucose released through cellulose hydrolysis in rumen produces :
- (1) Unsaturated fatty acids (2) CO₂
(3) Alcohol (4) Volatile fatty acids
63. Conversion of NO₂⁻ to N₂O/NO under anoxic conditions is carried out by :
- (1) *Pseudomonas* (2) *Nitrobacter* (3) *Nitrosomonas* (4) *Rhizobium*
64. Which one of the following herbicides has longest persistence in soil :
- (1) 2,4 D (2) Dalapin (3) Simazine (4) Atrazine
65. Protein that play role in attachment of rhizobium to plant root is :
- (1) Adhesin (2) Rhicadhesin (3) Rhizobin (4) Lecithin
66. Microorganism attached to opaque surface such as soil can be seen by :
- (1) Light microscopy (2) Phase contrast microscopy
(3) Nomarsky effect (4) Scanning electron microscopy
67. Which of the following control measures is designated to break the connector between the source of the infection and susceptible individuals ?
- (1) Quarantine and isolation of cases and/or carrier
(2) Destruction of an animal reservoir of infection
(3) Treatment of sewage to reduce water contamination
(4) Destruction of vectors by spraying with insecticides
68. In relation to bacterium's optimal growth requirements, which group would you expect to be *most* likely involved in decomposition of compost piles ?
- (1) Acidophiles (2) Psychrophiles (3) Mesophiles (4) Thermophiles
69. is the process in which microorganisms are used as a food source resulting in nitrogen and phosphorous mineralization.
- (1) Nitrogen fixation (2) Ammonification
(3) Microbivory (4) Eutrophication
70. A microbial community that develops in puddles in low areas and retained on the soil surface is called a :
- (1) Zooglea (2) Desert crust (3) Mychorrhizae (4) Microfilm
71. The nitrogen-fixation form of the *Rhizobium* bacterium is called a :
- (1) Bacteroid (2) Symbiosome
(3) Infection thread (4) T-plasmid

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82. Baker's Yeast is :
(1) *Saccharomyces ludwigi* (2) *Saccharomyces mycoides*
(3) *Saccharomyces cerevisiae* (4) *Saccharomyces ellipsoideus*
83. Active inoculum will give :
(1) Log phase (2) Lag phase
(3) Stationary phase (4) Death phase
84. Increase in the population number of cells in a culture is known as :
(1) Biomass growth (2) Population growth
(3) Cell growth (4) Tissue growth
85. The Waldhof type Fermenter is made up of :
(1) Carbon steel and clad in stainless steel
(2) Silicon and stainless steel
(3) Pyrex glass
(4) Mica and stainless steel
86. Which can be used as antifoaming agent ?
(1) Media (2) Oils (3) Nutrient (4) Amino acid
87. Penicillin is derived from :
(1) *Penicillium notatum* (2) *Penicillium claviforme*
(3) *Penicillium chrysogenum* (4) *Penicillium glaucum*
88. Microbial population maintained in which phase for long time using continuous culture system :
(1) Lag (2) Exponential (3) Death (4) Stationary
89. Cell density in is controlled by increasing and decreasing flow of culture medium :
(1) Chemostat (2) Turbidostat
(3) Continuous culture (4) Synchronous culture
90. Animal cell media contains :
(1) RBC (2) WBC (3) Platelet (4) Serum
91. The common cause of foaming in formation in fermentation is due to :
(1) Carbohydrate (2) Lipids (3) Proteins (4) Vitamins
92. The process of fermentation is carried out in the absence of :
(1) Vitamins (2) Sugars (3) Oxygen (4) Amino acids

93. Beer is most accurately defined as :
- (1) A beverage containing alcohol and made from cereals and hops
 - (2) A carbonated, alcoholic beverage flavoured with hop compounds
 - (3) A beverage made by fermenting sugars derived from barley, adjuncts and hops
 - (4) A beverage made by fermenting sugars extracted from malted barley and flavoured with hops
94. Which one of the following is being measured to determine the bitterness level in beer ?
- (1) Hop oil
 - (2) Beta acids
 - (3) Iso-alpha acids
 - (4) Alpha acids
95. Medical Microbiology is :
- (1) A branch of medicine
 - (2) A branch of microbiology
 - (3) A branch of medicine & microbiology
 - (4) None of above
96. Which is *not* a Gram positive bacteria ?
- (1) Staphylococcus
 - (2) Lactococcus
 - (3) Mycobacterium
 - (4) Escherichia
97. Which of the following is rod shaped bacterium ?
- (1) Neisseria
 - (2) Enterococcus
 - (3) Clostridium
 - (4) None of above
98. What is pathogen ?
- (1) A biological agent causes disease to the host
 - (2) A biological agent provide support to the host
 - (3) Both (1) & (2)
 - (4) None of above
99. What is commensal ?
- (1) A relationship between two organisms where one organism benefits but the other is unaffected
 - (2) A pathogen
 - (3) relationship between two organisms where one organism benefits but the other one is harmed
 - (4) None of above

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100. Which is a commensal ?
(1) Staphylococcus (2) Clostridium (3) Neisseria (4) E. Coli in gut
101. What is pyrogens ?
(1) A class of bacteria (2) A disease
(3) Toxins produced by pathogen (4) None of above
102. What is a opportunistic infection ?
(1) Infections in ill person
(2) Infection in healthy person
(3) Infection caused by other than pathogens
(4) A disease
103. Reason of immunodeficiency is :
(1) Recurrent infections (2) Malnutrition
(3) Cancer chemotherapy (4) All of above
104. Which is a waterborne disease ?
(1) Amoebiasis (2) Trichomoniasis (3) Leishmaniasis (4) None of above
105. African sleeping sickness is caused by :
(1) Entamoeba histolytica (2) Giardia lamblia
(3) Trypanosoma brucei (4) Toxoplasma Gondii
106. Which is *not* a protozoal disease ?
(1) Malaria (2) Amoebiasis (3) Gingivitis (4) None of above
107. Method for viral diagnosis is :
(1) Gel electrophoresis (2) Polymerase chain reaction
(3) Sequencing of genome (4) All of above
108. Which is *not* belong to same class ?
(1) Bacteriophage (2) Staphylococcus (3) Clostridium (4) None of above
109. A protozoal disease caused by sexual contact :
(1) Trichomoniasis (2) Leishmaniasis (3) Babesiosis (4) None of above
110. Which is *not* related term with STD ?
(1) Sexually transmissible diseases
(2) Sexually transmitted infection
(3) Venereal disease
(4) All of above

111. Which is *not* a antimicrobial agent ?
(1) Antibiotic (2) Analgesic (3) Antifungal (4) Antiparasitics
112. Which class of antimicrobial is *not* used in living object ?
(1) Antibiotics (2) Disinfectant
(3) antiviral (4) All of the above
113. What is the reason of drug resistance ?
(1) Excessive use of drug (2) Prescribing low doses
(3) Self medication (4) All of above
114. What is the meaning of term refractory ?
(1) reflex action (2) reference drug
(3) patient fail to respond to a drug (4) Response of a drug
115. The term 'rhizosphere was coined by :
(1) Kloepper (2) Weller (3) Lister (4) Hiltner
116. Which of the following microorganism can be used as biofertilizer ?
(1) Pseudomonas (2) Salmonella
(3) Agrobacterium (4) Lactococcus
117. PGPR is :
(1) Plant Growth Preventing Rhizobacteria
(2) Popular Growth-hormone Producing Rhizobacteria
(3) Plant Growth Promoting Rhizobacteria
(4) Popular Growth Promoting Rhizobacteria
118. Bacteriocins are produced from species of ?
(1) Pseudomonas (2) Lactobacillus
(3) Agrobacterium (4) Clostridium
119. The nitrogenase enzyme complex is comprised of :
(1) Dinitrogenase (2) Dinitrogenase reductase
(3) Both (1) and (2) (4) Nitrogenase carboxylase
120. VAM is :
(1) Ectomycorrhizae (2) Basidiomycetes
(3) Actinomycetes (4) Endomycorrhizae

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121. Pesticides include :
- (1) Fungicides, herbicides, insecticides, nematocides, and rodenticides
 - (2) Insecticides only
 - (3) Herbicides, insecticides and nematocides
 - (4) Insecticides, nematocides and rodenticides
122. The common mode of action of most insecticides is through the attack on :
- (1) Respiratory system
 - (2) Nervous system
 - (3) Muscular system
 - (4) Circulatory system
123. A carbamate pesticide is :
- (1) Propoxur
 - (2) Simazine
 - (3) Atrazine
 - (4) Tetraethyl pyrophosphate
124. The chemical fertilizer required for better rhizobial nitrogen fixation is :
- (1) Phosphorus
 - (2) Potassium
 - (3) Calcium
 - (4) Sodium
125. A green manure is :
- (1) Rice
 - (2) Sorghum
 - (3) Maize
 - (4) Sesbania
126. *Azotobacter* and *Bacillus polymyxa* are :
- (1) Decomposers
 - (2) Nonsymbiotic nitrogen fixers
 - (3) Symbiotic nitrogen fixers
 - (4) Pathogenic bacteria
127. *Triticale* is man made cereal obtained through hybridization between :
- (1) Wheat and rice
 - (2) Wheat and rye
 - (3) Wheat and oat
 - (4) Wheat and gram
128. Producing new plants by cells instead of seeds is :
- (1) Tissue culture
 - (2) Biofertilizer
 - (3) Amphimixis
 - (4) Meromixis
129. The phenomenon of using a predator for controlling a pest is :
- (1) Biological control
 - (2) Genetic engineering
 - (3) Artificial control
 - (4) Confusion technique
130. Source of Bt gene used for production of transgenic plants is :
- (1) *Pseudomonas*
 - (2) *Brevibacillus*
 - (3) *Lactobacillus*
 - (4) *Bacillus*
131. Genes for biodegradation of xenobiotics by *Pseudomonas* are located on :
- (1) Plasmids
 - (2) Genome
 - (3) Transcriptome
 - (4) Proteome

132. The first stable product of N₂ fixation is :
 (1) Nitrite (2) Nitrate (3) Ammonia (4) Nitric oxide
133. Bread Mold is :
 (1) *Saccharomyces cerevesiae* (2) *Rhizopus stolonifer*
 (3) *Mucor rouzii* (4) *Streptococcus pneumoniae*
134. Which of the following is not used as a Food preservative ?
 (1) Citric acid (2) Lactic acid
 (3) Propionic acid (4) Picric acid
135. Microbial Quality of milk is generally estimated by :
 (1) MBRT (2) Culture techniques
 (3) Turbidity test (4) MPN test
136. Ultra-High Temperature (UHT) milk is pasteurized at :
 (1) 133°C for 2 sec (2) 140-150°C for 1-5 sec
 (3) 100°C for 5 min. (4) 100°C for 10 min.
137. Staphylococcal gastroenteritis is :
 (1) Food Poisoning (2) Cancer
 (3) Infection (4) Food disorder
138. C1, C2, C3 are produced by *Staphylococcus aureus*. They are :
 (1) Alfatoxins (2) Endotoxin
 (3) Enterotoxins (4) Viral toxins
139. HACCP system was developed by :
 (1) NACMCF (2) FDA (3) WHO (4) UNESCO
140. pH of milk is :
 (1) 6.1 (2) 6.2 (3) 6.6 (4) 6.3
141. The Decomposition of animal proteins by anaerobic microorganisms is known as :
 (1) Ropiness (2) Mouldiness
 (3) putrefaction (4) Sliminess
142. Toxin produced by *Clostridium botulinum* is :
 (1) enterotoxin (2) exotoxin
 (3) Neurotoxin (4) Mycotoxin

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143. The organism responsible for yoghurt formation is :
- (1) *Streptococcus salivarius*
 - (2) *Streptococcus salivarius ssp. thermophilus*
 - (3) *Lactobacillus thermophilus*
 - (4) *Streptococcus bulgaricus*
144. The most common qualitative test carried out for foods is :
- (1) Aerobic Plate count
 - (2) Measurement of ATP
 - (3) Using Direct filter technique
 - (4) Direct microscopic count
145. Botulism is caused by :
- (1) *Staphylococcus aureus*
 - (2) *Clostridium perfringens*
 - (3) *Clostridium botulinum*
 - (4) *Salmonella typhi*
146. Tempeh is produced from :
- (1) *Rhizopus oligosporus*
 - (2) *Lactobacillus plantarum*
 - (3) *Pediococcus halophilus*
 - (4) *Pediococcus acidilacti*
147. Milk spoilage is caused by species of :
- (1) *Mucor*
 - (2) *Bacillus*
 - (3) *Leuconostoc*
 - (4) Yeast
148. 'Koji' process is used for the production of :
- (1) Soy sauce
 - (2) Tempeh
 - (3) Cheese
 - (4) Sauerkraut
149. Milk is pasteurized at :
- (1) 70°C for 20 s
 - (2) 65°C for 10 s
 - (3) 72°C for 15 s
 - (4) 80°C for 20 s
150. In HACCP, P stands for :
- (1) Hazard analysis critical control pasteurization
 - (2) Hazard analysis critical control points
 - (3) Hazard analysis critical control pressure
 - (4) Hazard analysis critical control product

अभ्यर्थियों के लिए निर्देश

(इस पुस्तिका के प्रथम आवरण-पृष्ठ पर तथा उत्तर-पत्र के दोनों पृष्ठों पर केवल नीली/काली बाल-प्वाइंट पेन से ही लिखें)

1. प्रश्न पुस्तिका मिलने के 10 मिनट के अन्दर ही देख ले कि प्रश्नपत्र में सभी पृष्ठ मौजूद हैं और कोई प्रश्न छूटा नहीं है। पुस्तिका दोषयुक्त पाये जाने पर इसकी सूचना तत्काल कक्ष निरीक्षक को देकर सम्पूर्ण प्रश्नपत्र की दूसरी पुस्तिका प्राप्त कर लें।
2. परीक्षा भवन में लिफाफा रहित प्रवेश-पत्र के अतिरिक्त, लिखा या सादा कोई भी खुला कागज साथ में न लायें।
3. उत्तर-पत्र अलग से दिया गया है। इसे न तो मोड़ें और न ही विकृत करें। दूसरा उत्तर-पत्र नहीं दिया जायेगा। केवल उत्तर-पत्र का ही मूल्यांकन किया जायेगा।
4. अपना अनुक्रमांक तथा उत्तर-पत्र का क्रमांक प्रथम आवरण-पृष्ठ पर पेन से निर्धारित स्थान पर लिखें।
5. उत्तर-पत्र के प्रथम पृष्ठ पर पेन से अपना अनुक्रमांक निर्धारित स्थान पर लिखें तथा नीचे दिये वृत्तों को गाढ़ा कर दें। जहाँ-जहाँ आवश्यक हो वहाँ प्रश्न-पुस्तिका का क्रमांक तथा सेट का नम्बर उचित स्थानों पर लिखें।
6. ओ० एम० आर० पत्र पर अनुक्रमांक संख्या, प्रश्न-पुस्तिका संख्या व सेट संख्या (यदि कोई हो) तथा प्रश्न-पुस्तिका पर अनुक्रमांक संख्या और ओ० एम० आर० पत्र संख्या की प्रविष्टियों में उपरिलेखन की अनुमति नहीं है।
7. उपर्युक्त प्रविष्टियों में कोई भी परिवर्तन कक्ष निरीक्षक द्वारा प्रमाणित होना चाहिये अन्यथा यह एक अनुचित साधन का प्रयोग माना जायेगा।
8. प्रश्न-पुस्तिका में प्रत्येक प्रश्न के चार वैकल्पिक उत्तर दिये गये हैं। प्रत्येक प्रश्न के वैकल्पिक उत्तर के लिये आपको उत्तर-पत्र की सम्बन्धित पंक्ति के सामने दिये गये वृत्त को उत्तर-पत्र के प्रथम पृष्ठ पर दिये गये निर्देशों के अनुसार पेन से गाढ़ा करना है।
9. प्रत्येक प्रश्न के उत्तर के लिये केवल एक ही वृत्त को गाढ़ा करें। एक से अधिक वृत्तों को गाढ़ा करने पर अथवा एक वृत्त को अपूर्ण भरने पर वह उत्तर गलत माना जायेगा।
10. ध्यान दें कि एक बार स्याही द्वारा अंकित उत्तर बदला नहीं जा सकता है। यदि आप किसी प्रश्न का उत्तर नहीं देना चाहते हैं, तो सम्बन्धित पंक्ति के सामने दिये गये सभी वृत्तों को खाली छोड़ दें। ऐसे प्रश्नों पर शून्य अंक दिये जायेंगे।
11. रफ कार्य के लिये इस पुस्तिका के मुखपृष्ठ के अंदर वाला पृष्ठ तथा अंतिम खाली पृष्ठ का प्रयोग करें।
12. परीक्षा के उपरान्त केवल ओ० एम० आर० उत्तर-पत्र ही परीक्षा भवन में जमा करें।
13. परीक्षा समाप्त होने से पहले परीक्षा भवन से बाहर जाने की अनुमति नहीं होगी।
14. यदि कोई अभ्यर्थी परीक्षा में अनुचित साधनों का प्रयोग करता है, तो वह विश्वविद्यालय द्वारा निर्धारित दंड का/की भागी होगा/होगी।