

Seat No.	
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**M.Phil./Ph.D. Entrance Examination, October - 2021****MICROBIOLOGY****Day and Date : Wednesday, 27 - 10 - 2021****Total Marks : 100****Time : 1.00 p.m. to 3.00 p.m.**

- Instructions :**
- 1) All questions are compulsory.
  - 2) Each question carries 2 mark.
  - 3) Answers should be marked in the given OMR answer sheet by darkening the appropriate option.
  - 4) Use black ball point pen only for marking the circle. Do not make any stray mark on the OMR Answer Sheet.
  - 5) Follow the instructions given on OMR Sheet.
  - 6) Rough work shall be done on the sheet provided at the end of question paper.
  - 7) Only non programmable calculators are allowed.

- 1) The Impact factor of a journal is the average number of times each of its articles is cited in the \_\_\_\_\_ years after publication.  
A) One  
B) Three  
C) Four  
D) Two
- 2) Listing of the authors other than corresponding author is in the order of their \_\_\_\_\_ in the research.  
A) Age  
B) Seniority  
C) Contributions  
D) Affection
- 3) \_\_\_\_\_ section of research paper consolidates and connects results with other findings.  
A) Conclusion  
B) Discussion  
C) Results  
D) Summary
- 4) The quality of research paper is appropriately defined by \_\_\_\_\_.  
A) Length of paper  
B) Impact factor of journal  
C) Citation  
D) Acceptance factor of journal

**P.T.O.**

- 5) Correct methodology used during research enhances \_\_\_\_\_ of research paper.  
A) Smoothness  
B) Clarity  
C) Reproducibility  
D) Preciseness
- 6) \_\_\_\_\_ is bibliographic software used to archive resources.  
A) End Note  
B) Rasmol  
C) Mega 6  
D) Infilibnet
- 7) One of the essential characteristic of resarch is  
A) Replicability  
B) Generalizability  
C) Usability  
D) Objectivity
- 8) An investigator studied the census data for a given areas and prepared a write up based on them. Such a write up is called \_\_\_\_\_.  
A) Research paper  
B) Article  
C) Thesis  
D) Research report
- 9) Which one of the following is an example of homogenous data?  
A) Multistoried houses in a colony  
B) Trees in the garden  
C) Vehicular traffic on a highway  
D) Student population in a class
- 10) The research that aims at immediate application is \_\_\_\_\_.  
A) Action research  
B) Empirical research  
C) Conceptual research  
D) Fundamental research
- 11) Most effective posters for presentations provide \_\_\_\_\_.  
A) Minimal text  
B) Minimal space  
C) Maximum text  
D) Minimal drawings
- 12) Insert the missing number from 4: 17; 7: ?  
A) 48  
B) 49  
C) 50  
D) 51

**M/P ENT - 121**

- 13) \_\_\_\_\_ culture medium is used for selection of a particular group of organisms.  
A) Differential  
B) Natural  
C) Enriched  
D) Selective
- 14) The specially designed vessel or tank in which the industrial fermentation is carried out, is known as \_\_\_\_\_.  
A) Bioreactor  
B) Biovessel  
C) Biotank  
D) Biocontainer
- 15) Sparger and \_\_\_\_\_ are the key components of aeration system of fermenter  
A) Shaft  
B) Impeller  
C) Thermostat  
D) Baffles
- 16) Tetracycline is produced by \_\_\_\_\_.  
A) *Streptomyces aureofaciens*  
B) *Streptomyces griseus*  
C) *Nocardia spp.*  
D) *Actionomyces spp.*
- 17) Diffusion assay is used for assay of \_\_\_\_\_.  
A) Enzymes  
B) Vitamins  
C) Organic acids  
D) Organic amines
- 18) Which of the following is not the criterion for using ribosomal RNA as evolutionary chronometer?  
A) Large size of r RNAs give a large number of possible sequence combinations  
B) rRNAs are functionally invariant  
C) rRNAs are universally distributed  
D) rRNAs have enzymatic activity
- 19) Beer Lambert's law gives the relation between which of the following?  
A) Reflected radiation and concentration  
B) Scattered radiation and concentration  
C) Energy absorption and concentration  
D) Energy absorption and reflected radiation

**M/P ENT - 121**

- 20) Chromatography is a physical method that is used to separate and analyse \_\_\_\_\_.
  - A) Simple mixtures
  - B) Complex mixtures
  - C) Viscous mixtures
  - D) Metals
- 21) Which of the following types of chromatography involves the separation of substances in a mixture over a 0.2 mm thick layer of an adsorbent?
  - A) Gas liquid
  - B) Column
  - C) Thin layer
  - D) Paper
- 22) Which of the following is not a feature of carrier gas used in gas chromatography?
  - A) It must be chemically inert
  - B) It should be suitable for the detector employed
  - C) It should not be completely pure
  - D) It should be cheap
- 23) PCR is a \_\_\_\_\_.
  - A) DNA melting technique
  - B) DNA amplification technique
  - C) DNA sequencing technique
  - D) all of these
- 24) NMR spectroscopy is used for determining structure in which of the following materials?
  - A) Radioactive materials
  - B) Insoluble chemical compounds
  - C) Liquids
  - D) Gases
- 25) The cathode in the Coolidge tube is made up of which of the following elements?
  - A) Quartz
  - B) Iron
  - C) Tungsten
  - D) Barium
- 26) Among following, which is true about peptide bond?
  - A) Cis conformation
  - B) Rigid and planar
  - C) Helical structure
  - D) Non-helical
- 27) Among following which is an example of molecular chaperonin?
  - A) GroEL
  - B) HSP70
  - C) Ubiquitin
  - D) DNA

- 28) \_\_\_\_\_ is a part of drug molecule that interact with receptor and responsible for biological activity.
- A) Antimetabolites                      B) Pharmacophore  
C) Metabolites                          D) Naproxen
- 29) HTML stands for \_\_\_\_\_.  
A) Hyper Text Markup Language  
B) Hyper Test Markup Language  
C) Hyper Text Madeup Language  
D) Hyper Text Markup Land
- 30) In equation  $H\psi = E\psi$ ;  $\psi$  is known as \_\_\_\_\_.  
A) Wavefunction                      B) Hamiltonian  
C) Energy                                D) None of the above
- 31) Among following which method is used to determine the primary structure of proteins?  
A) Electrophoresis                      B) Chromatography  
C) Ninhydrin                             D) Edman degradation
- 32) Combining isoelectric focusing and SDS electrophoresis sequentially in a process called \_\_\_\_\_.  
A) Gel filtration                      B) Dialysis  
C) Two-dimensional electrophoresis    D) Western blotting
- 33) \_\_\_\_\_ are involved in lignin biodegradation.  
A)  $\beta$ -1,4 gluconases                      B) Monooxygenases  
C) Laccases                                D) Phosphoketolases
- 34) Water hyacinth weed is controlled by using \_\_\_\_\_.  
A) *Puccinia chondrilla*                      B) *Cercospora riparia*  
C) *Phytophthora citrophthora*                      D) *Cercospora rodmanii*
- 35) \_\_\_\_\_ is a high acid food.  
A) Sauerkraut                                B) Meat  
C) Spinach                                      D) Pears

- 36) \_\_\_\_\_ is known as Father of Canning.  
A) Spallanzani  
B) Nicolas Appert  
C) Louis Pasteur  
D) Robert Cann
- 37) \_\_\_\_\_ is largely responsible for production of desirable aroma and flavor in milk products.  
A) *Streptococcus lactis*  
B) *Streptococcus diacetylactis*  
C) *Streptococcus thermophilus*  
D) *Streptococcus cremoris*
- 38) \_\_\_\_\_ is a secondary metabolite in the industrial production of Streptomycin.  
A) Riboflavin  
B) Cobalmin  
C) Niacin  
D) Folic Acid
- 39) Invertase enzyme is obtained from \_\_\_\_\_.  
A) *Micrococcus glutamicus*  
B) *Saccharomyces cerevisiae*  
C) *Streptomyces griseus*  
D) *Aspergillus niger*
- 40) Microorganisms utilizing nutrients from dead organic material are known as \_\_\_\_\_.  
A) Autotrophs  
B) Saprophytes  
C) Parasites  
D) Chemotrophs
- 41) Eutrophication is \_\_\_\_\_.  
A) Stratification  
B) Overgrowth of algae  
C) Results of deficiency of N and P in water bodies  
D) Result of presence of excess soluble carbon in water bodies
- 42) The five kingdom system of classification was set by \_\_\_\_\_.  
A) Robert Whittaker  
B) Carl Woese  
C) Aristotle  
D) Leeuwenhoek
- 43) Hybridoma cells for production of monoclonal antibodies are formed by fusion of \_\_\_\_\_.  
A) B cells with A cells  
B) B cells with cancer cell  
C) T cells with B cell  
D) T cell with cancer cell

- 44) Vaccines are not available for \_\_\_\_\_.  
A) Small poll B) Malaria  
C) Polio D) Rubella
- 45) For which of the following disease does the causative agent not strictly obey Koch's postulates?  
A) Tuberculosis B) Cholera  
C) Bovine spongiform encephalopathy D) Bird flue
- 46) Which of the following virus needs a helper virus for its genome replication?  
A) Hepatitis A B) Hepatitis E  
C) Hepatitis C D) Hepatitis D
- 47) Klenow fragment is a fragment of \_\_\_\_\_.  
A) DNA B) RNA polymerase  
C) DNA polymerase D) RNA
- 48) In transition mutation AT base pair is substituted by \_\_\_\_\_.  
A) GC B) CG  
C) TA D) None of the above
- 49) \_\_\_\_\_ is an energy generating factory in the cell.  
A) Endoplasmic reticulum B) Mitochondrion  
C) Golgi body D) Nucleosome
- 50) Resolving power of a light compound microscope is \_\_\_\_\_.  
A) Wavelength/2N.A. B) 2wavelength/N.A.  
C) 2N.A./wavelength D) N.A./2wavelength



**Rough Work**