

<b>Seat No.</b>	
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**M.Phil./Ph.D. Entrance Examination, August - 2018**  
**MICROBIOLOGY**

**Day and Date : Saturday, 11 - 08 - 2018**

**Total Marks : 100**

**Time : 1.00 p.m. to 3.00 p.m.**

- Instructions :**
- 1) All questions are compulsory.
  - 2) Each question carries 2 marks.
  - 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) \_\_\_\_\_section of research paper consolidates and connects results with other findings.  
A) Conclusion  
B) Discussion  
C) Results  
D) Summary
  
- 2) The order of writing manuscript and order of published paper is\_\_\_\_\_.  
A) similar  
B) not standardized  
C) vague  
D) different

- 3) \_\_\_\_\_Section of research paper describe the gap in current knowledge that can be filled by your conclusion.
- A) Introduction
  - B) Materials and methods
  - C) Results
  - D) Discussion
- 4) The quality of research paper is appropriately defined by\_\_\_\_\_.
- A) length of paper
  - B) number of authers
  - C) citation
  - D) acceptance factor of journal
- 5) \_\_\_\_\_of the following is correct regarding use of tense in scientific writing.
- A) Past Tense Is for Specific Observations
  - B) Past Tense Is for Generalized Observations
  - C) Present Tense Is for Specific Observations
  - D) Perfect Tense Is for Specific Observations
- 6) Correct methodology enhances\_\_\_\_\_of research paper.
- A) smoothness
  - B) clarity
  - C) reproducibility
  - D) preciseness

- 7) \_\_\_\_\_ is bibliographic software used to archive resources.
- A) EndNote
  - B) Rasmol
  - C) Mega 6
  - D) PIR
- 8) \_\_\_\_\_ is not the feature of symbols assigned to categories on a nominal scale.
- A) No quantitative meaning
  - B) Nothing more than labels or names
  - C) May be ordered according to magnitude
  - D) Cannot be subjected to arithmetic operations
- 9) Type-I Error occurs if\_\_\_\_\_.
- A) the null hypothesis is rejected even though it is true
  - B) the null hypothesis is accepted even though it is false
  - C) both the null hypothesis as well as alternative hypothesis are rejected
  - D) None of the above
- 10) \_\_\_\_\_ is a preferred sampling method for the population with finite size.
- A) Area sampling
  - B) Cluster sampling
  - C) Purposive sampling
  - D) Systematic sampling

## M/P ENT - 128

- 11) Research and Development become the index of development of country. Which of the following reasons are true with regards to this statement?
- A) because R&D reflect the true economic and social conditions prevailing in a country
  - B) because R&D targets the human development
  - C) because R&D can improve the standard of living of the people in a country
  - D) all the above
- 12) The proposition about research that you do not agree is\_\_\_\_\_.
- A) research improves the quality of teaching
  - B) research leads to finding solution to too many problems.
  - C) research is only a personnel achievement
  - D) research contributes to social progress
- 13) The data of research is\_\_\_\_\_.
- A) Qualitative only
  - B) Quantitative only
  - C) Both (A) and (B)
  - D) Neither (A) nor (B)
- 14) Efficient BOD reduction in waste water treatment occurs in\_\_\_\_\_process.
- A) activated sludge
  - B) screening
  - C) grit removal
  - D) flow reduction

- 15) \_\_\_\_\_ is not a biological assay
- A) gravimetric assay                      B) Diffusion assay  
C) growth assay                              D) enzyme assay
- 16) Disc turbine, vanned disc, open turbine and propellers are type of \_\_\_\_\_.
- A) agitator                                      B) stirrer gland  
C) baffles                                        D) aeration system
- 17) An ideal antifoam should not be \_\_\_\_\_.
- A) active at low concentration  
B) non-toxic to microorganisms  
C) heat labile  
D) readily dispersible
- 18) Streptomycin is synthesized in \_\_\_\_\_ phase.
- A) Tropho                                        B) Idio  
C) Lag    D) Log
- 19) In \_\_\_\_\_ feedback control each end product of the pathway controls the enzyme immediately after the branch point of the product.
- A) sequential  
B) cumulative  
C) co-operative  
D) concerted

- 20) The technique for purification of proteins that can be made specific for a given protein is
- A) Gel filtration chromatography
  - B) Ion exchange chromatography
  - C) Electrophoresis
  - D) Affinity chromatography
- 21) MIPS is a \_\_\_\_\_.
- A) Primary protein sequence Database
  - B) Secondary protein sequence Database
  - C) Composite Database
  - D) Structural Database
- 22) Resolving power of a microscope can be increased by\_\_\_\_\_.
- A) using an illumination of longer wavelength and by decreasing the NA
  - B) using an illumination of longer wavelength and by increasing the NA
  - C) using an illumination of shorter wavelength and by increasing the NA
  - D) using an illumination of shorter wavelength and by decreasing the NA
- 23) Acid hydrolysis step is necessary in \_\_\_\_\_staining procedure.
- A) nuclear
  - B) Cell wall
  - C) flagella
  - D) capsule

- 24) BLAST programme is useful for the identification of \_\_\_\_\_ sequences from database.
- A) protein
  - B) nucleic acid
  - C) proteins and nucleic acids
  - D) ligands
- 25) Among following \_\_\_\_\_ is a structural database.
- A) GeneBank
  - B) PDB
  - C) BLOCKS
  - D) PIR
- 26) Un-coating event in the TMV is \_\_\_\_\_ process.
- A) only cotranscriptional
  - B) cotranscriptional and coreplicational
  - C) only co-replicational
  - D) neither cotranscriptional nor coreplicational
- 27) Adeno virus, for multiplication process needs \_\_\_\_\_ of its host cell.
- A) only cytoplasm
  - B) only nucleoplasm
  - C) both cytoplasm and nucleoplasm
  - D) either cytoplasm or nucleoplasm

## M/P ENT - 128

- 28) In eukaryotic cells, Okazaki fragments are about \_\_\_\_\_ nucleotides long.
- A) 1000 to 1500    B) 300 to 500  
C) 150 to 200    D) 50 to 150
- 29) Separation of two parent DNA strands during replication is generally accomplished by\_\_\_\_\_.
- A) helicases    B) DNA Pol-I  
C) DNA Pol-II     D) DNA Pol- III
- 30) The introduction of the *E. coli lacZY* gene into *Pseudomonas aeruginosa* results in an increased\_\_\_\_\_ production
- A) pigment  
B) capsule  
C) surfactant  
D) ice nucleating protein
- 31) Identification of \_\_\_\_\_control forms the crux of metabolic engineering
- A) nodal    B) metabolic  
C) yield    D) gene
- 32) Water hyacinth weed is controlled by using\_\_\_\_\_.
- A) *Puccinia chondrillina*  
B) *Cercospora riparia*  
C) *Phytophthora citrophthora*  
D) *Cercospora rodmanii*



- 33) \_\_\_\_\_ is involved in bioleaching process.
- A) *Thiobacillus*                                 B) *Pseudomonas*  
C) *Nocardia*                                      D) *Anabaena*
- 34) Fortified wine contains \_\_\_\_\_ percent of alcohol by volume.
- A) 5 to 10    B) 10 to 15  
C) 19 to 21   D) 25 to 35
- 35) Minimal  $a_w$  value permitting growth of spoilage causing osmophilic yeasts is \_\_\_\_\_.
- A) 0.60    B) 0.75  
C) 0.80    D) 0.91
- 36) Surface taint type of butter spoilage is caused by \_\_\_\_\_ .
- A) *Pseudomonas fragi*  
B) *Pseudomonas putrefaciens*  
C) *Pseudomonas fluorescens*  
D) *Pseudomonas mephitica*
- 37) Rapid heating of cream accomplished by a combination of steam injection and evacuation in a process is known as \_\_\_\_\_.
- A) steam injection                                 B) steam infusion  
C) vacreation                                        D) Pasteurization

## M/P ENT - 128

- 38) \_\_\_\_\_convey the longest lasting immunity to an infectious agent.
- A) Naturally acquired passive immunity
  - B) Artificially acquired passive immunity
  - C) Naturally acquired active immunity
  - D) All of these
- 39) \_\_\_\_\_ do not stimulate an immune response unless they are bound to a larger molecule.
- A) Antigen
  - B) Virus
  - C) Hapten
  - D) Miligen
- 40) Clear and colorless zone of hemolysis on blood agar by Streptococci indicate\_\_\_\_\_ .
- A) alfa hemolysis
  - B) beta hemolysis
  - C) gamma hemolysis
  - D) delta hemolysis
- 41) \_\_\_\_\_toxin produced by *Cl. perfringens* is responsible for profound toxemia in gas gangrene.
- A) Epsilon
  - B) Alfa
  - C) Beta
  - D) Iota
- 42) Naming and organizing organisms is called\_\_\_\_\_.
- A) Cytology
  - B) Morphology
  - C) Anatomy
  - D) Taxonomy
- 43) The *Candida* species require fermentation equipment lined with plastic because they are extremely sensitive to\_\_\_\_\_.
- A) traces of cobalt
  - B) traces of nickel
  - C) traces of iron
  - D) none of these

## M/P ENT - 128

- 44) The first penicillin isolated by Alexander Fleming, penicillin-F, is also called as \_\_\_\_\_.
- A) 2-Pentenyl Penicillin                      B) n-heptyl penicillin  
C) phenoxymethyl penicillin                D) benzyl penicillin
- 45) \_\_\_\_\_ organism have shown the ability of phosphate solubilization in red wine.
- A) *S. cerevisiae*                                      B) *Gluconobacter oxydans*  
C) *Bacillus subtilis*                                D) None of these
- 46) \_\_\_\_\_ type of Rifampicin is most stable and selected for further transformation.
- A) A    B) B  
C) C    D) D
- 47) The waste from brewing plant is generally \_\_\_\_\_ in nature.
- A) acidic    B) basic  
C) neutral    D) sweat
- 48) The fibrous residue from sugar factory used as fuel is \_\_\_\_\_.
- A) spent wash                                        B) bagass  
C) molasses                                         D) press mud
- 49) \_\_\_\_\_ is a language used to write Web pages.
- A) Perl     B) C-language  
C) HTML    D) BLAST
- 50) Among following, \_\_\_\_\_ is a programme used to construct phylogenetic tree.
- A) SPARTAN                                         B) Mega 4.0  
C) SYBYL     D) RasMol



**Rough Work**