

Seat No.	
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M.Phil./Ph.D. Entrance Examination, September - 2022**BOTANY****Research Methodology****Sub. Code: 58800****Day and Date : Thursday, 22- 09 - 2022****Total Marks : 100****Time : 4.00 p.m. to 6.00 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 pint 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) Which of the following features are considered as critical in qualitative research?
 - A) Collecting data with the help of standardized research tools.
 - B) Design sampling with probability sample techniques.
 - C) Collecting data with bottom-up empirical evidence.
 - D) Gathering data with top-down schematic evidence
- 2) Generally there are _____ characteristics of Research hypothesis.
 - A) 8
 - B) 6
 - C) 7
 - D) 3
- 3) A statement made about a population for testing purpose is called?
 - A) Statistic
 - B) Hypothesis
 - C) Level of Significance
 - D) Test-Statistic
- 4) How to judge the depth of any research?
 - A) By research title
 - B) By research duration
 - C) By research objectives
 - D) By total expenditure on research

M/P ENT - 03

- 5) Which of the following is one of the informal experimental designs _____?
- A) Completely Randomized design
 - B) Randomized block design
 - C) Latid square design
 - D) Before and after without control design
- 6) Gathering knowledge for knowledge's sake is termed as _____.
- A) Fundamental research
 - B) Applied research
 - C) Quantitative research
 - D) Qualitative research
- 7) These are _____ most popular and important measures of central tendency.
- A) Four
 - B) Five
 - C) Three
 - D) Six
- 8) Which of the following formula is used to obtain median of dataset where 'n' is odd ____?
- A) $n/2$
 - B) $n+1/2$
 - C) $n+2/2$
 - D) $n-1/2$
- 9) Data Analysis is a process of?
- A) Inspecting data
 - B) Cleaning data
 - C) Transforming data
 - D) All of the above
- 10) Range _____.
- A) Highest value of an item in a series-Lowest value or an item in a series
 - B) Medium value of an item in a series- Lowest value or an item in a series
 - C) Last value of an item in a series- First value or an item in a series
 - D) None of these
- 11) The variable which occurs most frequently in the observation is called _____.
- A) Mean
 - B) Median
 - C) Mode
 - D) Deviation

M/P ENT - 03

- 12) Which of the following name _____ is related with ANOVA.
A) R. A. Fisher
B) J.D. Kothari
C) C.R. Kothari
D) G.B.Giles
- 13) Which of the following is the good quality of research?
A) Watching habit
B) Reading habit
C) Writing habit
D) Curiosity
- 14) *Staphylococcus aureus* was isolated by _____.
A) Rosenbach
B) Louis Pasteur
C) Passet
D) Sir Alexander Ogston
- 15) Which of the following is used to grow bacterial culture continuously?
A) Chemostat
B) Hemostat
C) Coulter-Counter
D) Turbidostat
- 16) Which of the following name is related with French-Binet Simon Intelligence test _____?
A) Lewis Terman
B) De candole
C) Bessey
D) Linnaeus
- 17) What is Bibliometry?
A) Function of Library Network
B) Information Management Service
C) Information Management Tool
D) Library Service
- 18) Generally _____ addition, subtraction, multiplication and division are called basic math operations.
A) Digging
B) Throwing
C) Counting
D) Writing
- 19) Which of the following name is related to with the definition of Plagiarism?
A) Kothari
B) Redman
C) Seboyar
D) Merriam Webster

M/P ENT - 03

- 20) Which part of the compound microscope helps in gathering and focusing light rays on the specimen to be viewed?
A) Eyepiece lens
B) Objective lens
C) Condenser lens
D) Magnifying lens
- 21) Magnification of a microscope is calculated by _____ formula?
A) $m=e/f \times 1$
B) $m=1/f \times e$
C) $m=f \times e/1$
D) $m=1 \times f \times e$
- 22) Which of the following name is related with development of high power objective of microscope _____?
A) Scully
B) Tswett
C) J.J. Lister
D) Zaccharios Janssen
- 23) Paraffin embedded sections of tissue are cut by
A) Electron beams
B) Sharp knife
C) Laser
D) Microtome
- 24) The botanical name of white button mushroom is _____.
A) *Morchella Crassipes*
B) *Amanita muscana*
C) *Agaricus brunnescens*
D) *Armillaria bulbosa*
- 25) The standard size of herbarium sheet is _____.
A) 42×42cm
B) 28×42cm
C) 28×26cm
D) 28×28cm
- 26) Source of light in fluorescence microscopy is from _____.
A) Mercury lamp
B) Sunlight
C) Both (A) and (B)
D) None of these
- 27) Sludge treatment is used only in _____ type waste water treatment.
A) Anaerobic
B) Aerobic
C) Sewage
D) Bacterial
- 28) Bacteria are generally multiplied by _____.
A) Binary fission
B) Vegetative propagation
C) Divisional fusion
D) None of these

M/P ENT - 03

- 29) Presence of _____ on the stem is a characteristic feature of gymnosperms.
- A) Pulvinous leaf base B) Irregular nodes
C) Stem scars D) Leaf scars
- 30) Bisporangiate cones occur in _____.
- A) Ginkgo B) Ephedra
C) Cycas D) Pinus
- 31) _____ are also known as micro consumers.
- A) Primary consumers B) Secondary consumers
C) Tertiary consumers D) Decomposers
- 32) _____ is a large geographical area of distinctive plant and animal groups, which are adapted to that particular environment.
- A) Genome B) Forest
C) Biome D) Tundra
- 33) _____ is the synthetic medium used to culture fungi.
- A) Czapek-Dox Agar
B) Potato-dextrose agar
C) Malt extract peptone dextrose agar
D) Martin-Rose Bengal Streptomycin agar
- 34) The laminar air flow works on the principle of application of _____.
- A) High-Efficiency Particulate Air filters
B) Cellulose acetate filters
C) Cellulose nitrate filters
D) Asbestos filters
- 35) A specimen that is cited in the protologue but that is neither the holotype nor an isotype is called _____.
- A) Lectotype B) Neotype
C) Paratype D) Epitype
- 36) Longest leaves up to 25 meters are found in _____.
- A) *Corypha umbraculifera* B) *Raphia regalis*
C) *Lodoicea maldivica* D) *Hyphaene dichotoma*

M/P ENT - 03

- 37) Collateral and closed type of vascular bundles is a characteristic of _____.
A) Stem of Helianthus B) Root of Mangifera
C) Stem of Soyabean D) Stem of Zea
- 38) _____ is an example of a wild relative of a crop plant.
A) *Argemone mexicana* B) *Oryza rufipogon*
C) *Ipomea batatas* D) *Oryza sativa*
- 39) _____ is absent in dicot stem.
A) Hypodermis B) Xylem vessels
C) Cuticle D) Bundle Sheath
- 40) The last layer of cortex is wavy band made up of compact barrel shaped parenchyma. The band is called as _____.
A) Phelloderm B) Ventogen
C) Starch sheath D) Caulogen
- 41) Size of chloroplast genome is _____ kbp.
A) 50-100 B) 300-700
C) 120-160 D) 85-90
- 42) The nucleotide sequences that code for amino acids are called as _____.
A) Exons B) Introns
C) Replicons D) Mutons
- 43) Range is the _____ between the lowest and the highest values present in the observations included in sample.
A) Addition B) Difference
C) Variance D) Standard error
- 44) The ratio of genotypic variance to _____ for the trait is called as _____.
A) Phenotypic variance, cross pollinated species
B) Phenotypic variance, heritability
C) Breeding, viability
D) Standard variance, abnormality

M/P ENT - 03

- 45) Which of the following statement is INCORRECT about cloning vector?
- A) It must have an origin of replication
 - B) It must possess a unique restriction site for RE enzymes.
 - C) It must possess some marker gene such that it can be used for later identification of recombinant cell
 - D) It must be large size
- 46) _____ does not require ATP to cut DNA at restriction site itself.
- A) Type I restriction endonuclease
 - B) Type II restriction endonuclease
 - C) Type III restriction endonuclease
 - D) Type IV restriction endonuclease
- 47) Succinate dehydrogease enzyme involved in TCA cycle which catalyzes reaction conversion of _____ to _____.
- A) Fumarate to Succinate
 - B) Succinate to Fumarate
 - C) Malate to Fumarate
 - D) Malate to Oxaloacetate
- 48) Fructose -6-Phosphate is changed to Fructose 1,6- diphosphate by _____.
- A) Hexokinase
 - B) Aldolase
 - C) Phosphofructokinase
 - D) Enolase
- 49) A large well-known species that is one of the “charismatic megafauna” is Called_____.
- A) Indicator species
 - B) Keystone species
 - C) Umbrella species
 - D) Flagship species
- 50) The technique that involves freezing purified DNA, eggs, sperm, embryos so that genetic diversity can be maintained in the breeding programs is _____.
- A) Cross fostering
 - B) Genome resource bank
 - C) Artificial insemination
 - D) Artificial incubation



Rough Work