



## Dr.G.R.Damodaran College of Science

(Autonomous, affiliated to the Bharathiar University, recognized by the UGC) Re-  
accredited at the 'A' Grade Level by the NAAC and ISO 9001:2008 Certified  
CRISL rated 'A' (TN) for MBA and MIB Programmes

III BSC [2015-2018]

SEMESTER V

SKILL BASED SUBJECT: RESEARCH METHODOLOGY - 509C

Multiple Choice Questions.

1. Basic steps to begin any biological experiment is \_\_\_\_\_.

- A. aim.
- B. plan.
- C. procedure.
- D. all the above.

ANSWER: D

2. Which of the following is the first step in starting the research process?

- A. Searching sources of information to locate problem.
- B. Survey of related literature.
- C. Identification of problem.
- D. Searching for solutions to the problem.

ANSWER: C

3. Which report section is intended to describe the purpose with a full statement of the research question?

- A. Results.
- B. Objectives.
- C. Appendices.
- D. Method.

ANSWER: B

4. The hierarchy of subheadings in the research report are \_\_\_\_\_.

- A. centred, underlined.
- B. centred, not underlined.
- C. none of the above.
- D. both a and b.

ANSWER: D

5. Hyphen is a \_\_\_\_\_ line.

- A. small horizontal line.
- B. large horizontal line.
- C. dotted line.
- D. splitted line.

ANSWER: A

6. Action research means \_\_\_\_\_.

- A. A longitudinal research.
- B. An applied research.
- C. A research initiated to solve an immediate problem.
- D. A research with socioeconomic objective.

ANSWER: C

7. The literature review is a \_\_\_\_\_ process.

- A. open.

- B. closed.
- C. discontinuous.
- D. continuous.

ANSWER: D

8. The essential qualities of a researcher are \_\_\_\_\_.
- A. Spirit of free enquiry.
  - B. Reliance on observation and evidence.
  - C. Systematization or theorizing of knowledge.
  - D. All the above.

ANSWER: D

9. A research paper is a brief report of research work based on \_\_\_\_\_.
- A. Primary Data only.
  - B. Secondary Data only.
  - C. Both Primary and Secondary Data.
  - D. None of the above.

ANSWER: C

10. When the reference with more than one author quoted in a research report given as et al in \_\_\_\_\_.
- A. italic with full stop.
  - B. italic.
  - C. bold.
  - D. capital.

ANSWER: A

11. A concise outline survey of the contents of a thesis is called as \_\_\_\_\_.
- A. abstract.
  - B. objective.
  - C. synopsis.
  - D. key words.

ANSWER: C

12. Plagiarism is \_\_\_\_\_.
- A. reproducing materials from other workers reports.
  - B. reproducing materials from our work.
  - C. reproducing materials from our previous reports.
  - D. no reproduction.

ANSWER: A

13. \_\_\_\_\_ is essential information required for all references.
- A. Authors surname and initials.
  - B. The imprint.
  - C. Call number of the book or journal.
  - D. All the above.

ANSWER: D

14. What is Bibliometry?
- A. Function of Library Network.
  - B. Information Management Service.
  - C. Information Management Tool.
  - D. Library Service.

ANSWER: C

15. Review of literature is related to \_\_\_\_\_.
- A. Bibliography.
  - B. Results.
  - C. Methodology.

D. Discussion.

ANSWER: A

16. Which of the following is not an essential element of report writing?

A. Research Methodology

B. Reference

C. Conclusion

D. None of these

ANSWER: D

17. \_\_\_\_\_ which of the following is suitable for research reading?

A. We should force our self to read fast.

B. We should make a few stops or eye fixations in each line as possible.

C. We should practice to keep on reading forward.

D. All the above.

ANSWER: D

18. A bibliography is a list of all source material to which reference has been made \_\_\_\_\_.

A. numerical.

B. alphabetical.

C. notational.

D. bulleted.

ANSWER: B

19. The imprint should contain \_\_\_\_\_.

A. Place of publication.

B. Publishers.

C. Date of publication.

D. All the above.

ANSWER: D

20. The essential information required for all references are \_\_\_\_\_.

A. authors surname and initials.

B. the imprint.

C. call number of the book or journal.

D. all the above.

ANSWER: D

21. Many journals require the use of & in the place of and in order to save \_\_\_\_\_.

A. time.

B. space.

C. easy to understand.

D. to introduce symbols.

ANSWER: B

22. \_\_\_\_\_ is placed at the end of the text or writing.

A. conclusion.

B. reference.

C. summary.

D. materials and methods.

ANSWER: B

23. The requirements for web articles include \_\_\_\_\_.

A. name of the authors.

B. year and title of the article.

C. journal, volume of the title.

D. All the above.

ANSWER: D

24. A full length research article generally consist of \_\_\_\_\_.

- A. a title.
- B. keywords and abstract.
- C. name of the author and address.
- D. all the above.

ANSWER: D

25. Which of these would not help your confidence in the context of a presentation?

- A. Looking good.
- B. Presentation software.
- C. Comfort with the situation.
- D. Good preparation.

ANSWER: B

26. \_\_\_\_\_ is a method to attain the goal of science.

- A. Project.
- B. Research.
- C. Working.
- D. Doing experiments.

ANSWER: B

27. \_\_\_\_\_ is the main objective of basic research.

- A. Pure research.
- B. Knowledge.
- C. Collecting information.
- D. Data interpretation.

ANSWER: A

28. Information is \_\_\_\_\_.

- A. Raw Data.
- B. Processed Data.
- C. Input data.
- D. Organized data.

ANSWER: D

29. Testing hypothesis is a

- A. Inferential statistics
- B. Descriptive statistics
- C. Data preparation
- D. Data analysis

ANSWER: A

30. \_\_\_\_\_ research includes surveys and false finding enquiries of difficult fields.

- A. Descriptive.
- B. Analytical.
- C. Applied.
- D. Fundamental.

ANSWER: A

31. \_\_\_\_\_ research aims at finding a solution for immediate problems facing a society.

- A. Applied.
- B. Industrial.
- C. Business.
- D. Descriptive.

ANSWER: A

32. \_\_\_\_\_ research is based on the measurement of quantitative of quality or amount.

- A. Qualitative.
- B. Quantitative.
- C. Attitude.
- D. Motivation.

ANSWER: B

33. \_\_\_\_ research is concerned with qualitative research.

- A. Qualitative.
- B. Attitude.
- C. Conceptual.
- D. Opinion.

ANSWER: A

34. \_\_\_\_ research is related to some abstract ideas or theory.

- A. Empirical.
- B. Conceptual.
- C. Simulation.
- D. Orientation.

ANSWER: B

35. Research can be field setting research or \_\_\_\_.

- A. Historical.
- B. Laboratory.
- C. Oriented.
- D. Empirical.

ANSWER: B

36. Research methods refer to the behaviour and \_\_\_\_ used in selecting and construction research techniques.

- A. instruments.
- B. data collection.
- C. methodology.
- D. observation.

ANSWER: A

37. Qualities of good research include \_\_\_\_.

- A. Systematic.
- B. Logical.
- C. Empirical and replicable.
- D. all the above.

ANSWER: D

38. Many research in our country face the difficulty of adequate \_\_\_\_.

- A. timely secretarial assistance.
- B. information gathering.
- C. data collection.
- D. working.

ANSWER: A

39. The research problem should define in a \_\_\_\_ manner.

- A. statement of the problem in general way.
- B. understanding the nature of the problem.
- C. surveying the available literature and developing ideas through discussion.
- D. all the above.

ANSWER: D

40. \_\_\_\_ is the arrangement of conditions for collection and analysis of data.

- A. Research design.

- B. Research methods.
- C. Research analysis.
- D. Operational research.

ANSWER: C

41. \_\_\_\_\_ can be measured for a given sample design and size.

- A. Sampling error.
- B. Sampling size.
- C. Sampling methods.
- D. Sampling collection.

ANSWER: A

42. \_\_\_\_\_ scale is used to assigning number and symbols.

- A. Nominal.
- B. Ordinal.
- C. Internal.
- D. Ratio.

ANSWER: A

43. A research report helps to \_\_\_\_\_.

- A. Communicate the findings to a specific audience.
- B. Know the scientist motivation.
- C. Understand the meaning, interpretation and significance of the result.
- D. All the above.

ANSWER: D

44. The abstract of the research article describes briefly about \_\_\_\_\_.

- A. materials used.
- B. methods adopted.
- C. the objective of the study.
- D. all the above.

ANSWER: D

45. The title of a table should not \_\_\_\_\_.

- A. be a complete sentence.
- B. be divided into two or more clauses or sentences.
- C. contain unnecessary words.
- D. all the above.

ANSWER: D

46. The stub of the table \_\_\_\_\_.

- A. is the column at the extreme left of a table.
- B. is the column at the extreme right of a table.
- C. should not be arranged in ascending order.
- D. should not be arranged in descending order.

ANSWER: A

47. Foot notes are used for \_\_\_\_\_ notes.

- A. source.
- B. general.
- C. specific.
- D. All the above.

ANSWER: D

48. Single line spacing is used in \_\_\_\_\_.

- A. titles of tables.
- B. footnotes of tables.
- C. caption of figure.

D. All the above.

ANSWER: D

49. Good research report will always \_\_\_\_\_.

- A. provide respondents names and addresses.
- B. provide results that may be irrelevant.
- C. focus on the Harvard style.
- D. focus on addressing the research objectives.

ANSWER: D

50. The new area of science that seeks to catalogue and analyze every protein in the human body in order to help understand the human genome is called\_\_\_\_\_.

- A. Bioinformatics.
- B. Proteomics.
- C. Molecular genetics.
- D. Genomics.

ANSWER: A

51. The field of study involving the sequencing of the genome of an organism is \_\_\_\_\_.

- A. Genomics.
- B. Proteomics.
- C. Bioinformatics.
- D. Molecular genetics.

ANSWER: A

52. What is the purpose of doing research?

- A. To identify problem
- B. To find the solution
- C. Both a and b
- D. None of these

ANSWER: C

53. Pick out the odd one out.

- A. Genbank.
- B. EMBL.
- C. PDB.
- D. DDBJ.

ANSWER: C

54. Which database is called as protein knowledge database?

- A. UniProt.
- B. PIR.
- C. Swiss-Prot.
- D. PROSITE.

ANSWER: C

55. Pick out the protein sequence database.

- A. PDB.
- B. EMBL.
- C. PIR.
- D. DDBJ.

ANSWER: C

56. The report writer should always remember that people have expectations about what information they will find and where it will be. It is unusual for final reports to have a section with \_\_\_\_\_.

- A. Executive summary.
- B. appendices.
- C. recommendation.

D. research costs.

ANSWER: D

57. PIR stands for \_\_\_\_\_.

- A. Peptide Information Resource.
- B. Protein Information Resource.
- C. Protein Information Research.
- D. Peptide Information Resource.

ANSWER: B

58. Which one of the following database is maintained at NCBI?

- A. Genbank.
- B. EMBL.
- C. PDB.
- D. DDBJ.

ANSWER: A

59. Which method can be applicable for collecting qualitative data?

- A. Artifacts (Visual) and sensory)
- B. People
- C. Media products ( Textual, Visual and sensory)
- D. All of these

ANSWER: D

60. Graphically partition is determined with the help of \_\_\_\_\_.

- A. Frequency polygon.
- B. Bar diagram.
- C. Line diagram.
- D. Ogive curve.

ANSWER: D

61. The purpose of a report is to inform \_\_\_\_\_.

- A. public.
- B. writer.
- C. reader.
- D. others .

ANSWER: A

62. Aim of the title is to inform?

- A. Report conclusion.
- B. Report idea.
- C. Report contents.
- D. Report theme.

ANSWER: C

63. Which of the following are principles of questionnaire construction?

- A. Consider using multiple methods when measuring abstract constructs.
- B. Use multiple items to measure abstract constructs.
- C. Avoid double-barreled questions.
- D. All of the above.

ANSWER: D

64. The purpose of the summary is to give a \_\_\_\_\_ overview.

- A. long.
- B. expanded.
- C. brief.
- D. clear.

ANSWER: C



65. The summary should contain \_\_\_\_\_ words.

- A. 500-600.
- B. 200-300 words.
- C. 100-150 words.
- D. 50-100 words.

ANSWER: C

66. The main body of the report gives the \_\_\_\_\_.

- A. real content.
- B. explanation of report.
- C. short explanation of report.
- D. explains about report.

ANSWER: A

67. Methods and materials part should be \_\_\_\_\_.

- A. long.
- B. short.
- C. precise.
- D. extraordinary.

ANSWER: B

68. \_\_\_\_\_ is used to understand the report easily.

- A. Tables
- B. Notes of the report.
- C. Place of the report.
- D. By the report written.

ANSWER: A

69. \_\_\_\_\_ is followed by the conclusion.

- A. Explanations about report.
- B. Recommendations.
- C. Report.
- D. Title.

ANSWER: B

70. The method section for \_\_\_\_\_ study includes detailed information on the sampling frame; sample size; variables selected for measurement; questionnaire, sampling procedure; response rates.

- A. a quantitative.
- B. a qualitative.
- C. a desk research.
- D. All of the above.

ANSWER: A

71. Which one of these phrases is best avoided in a report?

- A. Frequently occurring.
- B. Typical behaviour.
- C. Normal respondent.
- D. Average consumption.

ANSWER: C

72. Which of the following is non-probability sampling?

- A. Snowball
- B. Random
- C. Cluster
- D. Stratified

ANSWER: A

73. In biosafety, the shipment of infectious biological materials must adhere to \_\_\_\_\_.

- A. sensitive information.
- B. program management.
- C. appropriate transport procedure.
- D. training.

ANSWER: C

74. In group interview their are \_\_\_\_\_

- A. One interviewer and one interviewee interviewee
- B. More than one interviewer and one interviewee
- C. One interviewer and more than one interviewee
- D. More than One interviewer and more than one interviewee

ANSWER: C

75. The result section is where you present the findings in a readable format. In a qualitative report it is likely that you will always use \_\_\_\_\_.

- A. pie charts.
- B. graphs.
- C. tables.
- D. words.

ANSWER: D

76. The literature review can help the researcher in \_\_\_\_\_.

- A. understand the relationship between his/her research problem and the body of knowledge in the area.
- B. knowing how to formulate the problem and all the relevant issues related to it.
- C. having clear answers to the research questions considered (who, how, why).
- D. solving the research problem.

ANSWER: A

77. The literature review can help to improve the researchers methodology since \_\_\_\_\_.

- A. the selection of appropriate survey respondents will be much easier.
- B. the researcher will be aware of the procedures/methods used by others.
- C. have answers to the research questions considered.
- D. all the above.

ANSWER: B

78. \_\_\_\_\_ should be developed that minimise the potential exposure of responding that personel to hazardous biological materials.

- A. Standard conventional procedure.
- B. Standard emergency procedure.
- C. Standard operational procedure.
- D. None of the above.

ANSWER: C

79. Which of the following are associated with behavioral observation?

- A. Non-verbal analysis
- B. Linguistic analysis
- C. Spatial analysis
- D. All of these

ANSWER: D

80. Activation of amino acids takes place in \_\_\_\_\_.

- A. ribosome.
- B. cytosol.
- C. mitochondria.
- D. chloroplast.

ANSWER: A

81. Open-ended questions provide primarily \_\_\_\_\_ data.

- A. Confirmatory data.
- B. Qualitative data.
- C. Predictive data.
- D. None of the above.

ANSWER: B

82. Which of the following is not a major method of data collection?

- A. Questionnaires.
- B. Focus groups.
- C. Correlational method.
- D. Secondary data.

ANSWER: C

83. Which of these is bad practice for a report?

- A. To have a contents page or another form of indexing.
- B. To include names of all respondents with contact details.
- C. To state fieldwork dates and sample sizes.
- D. To use a title that is short and to the point.

ANSWER: B

84. Uniting various qualitative methods with quantitative methods can be called as.....

- A. Coalesce
- B. Triangulation
- C. Bipartite
- D. Impassive

ANSWER: C

85. Who began the protein engineering work?

- A. Max Perutz.
- B. Williams.
- C. Robert Brown.
- D. Lewis.

ANSWER: A

86. 3D structure of an enzyme is dependent on \_\_\_\_\_ sequence.

- A. DNA.
- B. RNA.
- C. peptide.
- D. amino acid.

ANSWER: D

87. Which of these software packages is most commonly used in presentations?

- A. Powerpoint.
- B. MindManager.
- C. NVivo.
- D. NUD\*IST.

ANSWER: A

88. In chemical modification \_\_\_\_\_ is charged.

- A. 3D structure of proteins.
- B. structure activity of proteins.
- C. functional group of side chains of amino acids.
- D. molecular sequence of proteins.

ANSWER: C

89. \_\_\_\_\_ amino acid in protein rises its isoelectric point.

- A. Serine.

- B. Arginine.
- C. Alanine.
- D. Lysine.

ANSWER: B

90. \_\_\_\_\_ helps in cleavage of proteins.

- A. Sodium chloride.
- B. Cynogen bromide.
- C. Conc. HCl.
- D. Sodium hydroxide.

ANSWER: B

91. Researchers use both open-ended and closed-ended questions to collect data. Which of the following statements is true?

- A. Open-ended questions directly provide quantitative data based on the researchers predetermined response categories.
- B. Closed-ended questions provide quantitative data in the participants own words.
- C. Open-ended questions provide qualitative data in the participants own words.
- D. Closed-ended questions directly provide qualitative data in the participants own words.

ANSWER: C

92. \_\_\_\_\_ helps in structure determination.

- A. GC-MS.
- B. Chromatography.
- C. NMR.
- D. Spectrometry.

ANSWER: C

93. \_\_\_\_\_ is the physical process by which a polypeptide folds into its characteristic and functional 3-D structure from random coil.

- A. Protein synthesis.
- B. Protein folding.
- C. Protein sequence.
- D. Protein degradation.

ANSWER: B

94. The amino acid of \_\_\_\_\_ defines its active conformation.

- A. secondary structure.
- B. primary structure.
- C. tertiary structure.
- D. quaternary structure.

ANSWER: D

95. Chaperons are known as \_\_\_\_\_.

- A. proteins.
- B. globular proteins.
- C. heat shock proteins.
- D. granular proteins.

ANSWER: C

96. are used to prevent misfolding of proteins.

- A. Chaperons.
- B. Amino acids.
- C. DNA.
- D. Lipids.

ANSWER: A

97. Alpha helix and beta helix of proteins are stabilized by \_\_\_\_\_ bonds.

- A. H<sub>2</sub> bonds.
- B. Co- valent bonds.
- C. ionic bonds.
- D. intramolecular hydrogen bonds.

ANSWER: D

98. All of these situations are likely to have an influence on eye contact. Which one would you try to ask the meeting organizer to change to give you better eye contact?

- A. Reason for meeting.
- B. Acoustics.
- C. Room layout.
- D. Audience composition.

ANSWER: C

99. The report is not \_\_\_\_\_.

- A. tangible evidence of a research project.
- B. a research proposal.
- C. future secondary data.
- D. a basis for decision making.

ANSWER: B

100. Techniques used for studying protein folding include \_\_\_\_\_.

- A. CD.
- B. Polarization interferometry.
- C. VCD.
- D. All the above.

ANSWER: D

101. The abstract is \_\_\_\_\_.

- A. a precise of all important parts of a research report.
- B. a list of criticisms of the study.
- C. none of these.
- D. a summary of all the major findings.

ANSWER: A

102. Folded structure of proteins is determined by \_\_\_\_\_.

- A. X- ray crystallography and NMR studies.
- B. chromatography.
- C. spectrometry.
- D. colorimetry.

ANSWER: A

103. Normally, where in a research report are the hypotheses justified to the reader?

- A. In the introduction.
- B. In the discussion.
- C. None of these.
- D. In the conclusions.

ANSWER: A

104. Transition state theory helps to find relationship.

- A. specific structure.
- B. structure reactiviy.
- C. structure functions.
- D. structure modeling.

ANSWER: B

105. Chemical reactive groups in proteins are \_\_\_\_\_.

- A. nucleophiles.

- B. mesophiles.
- C. electrophiles.
- D. thermophiles.

ANSWER: A

106. Reagents used to modify proteins are \_\_\_\_\_.

- A. nucleophiles.
- B. electrophiles.
- C. thermophiles.
- D. mesophiles.

ANSWER: B

107. What are the important features of a table or diagram included in a research report?

- A. That it is easy make.
- B. That it should be colourful.
- C. That it is created using SPSS.
- D. That it should be readily understood and helpful.

ANSWER: D

108. Why are the references included in a research project?

- A. To fully identify the source of information and ideas discussed in the report so that others may check for themselves.
- B. To keep a record of everything that you have read in writing the report.
- C. To impress lectures.
- D. It is courtesy to the authors of the works that you have read.

ANSWER: A

109. Which is probably the best of the following?

- A. We distribute the questionnaires to the participants at the end of an introductory lecture in psychology.
- B. Participants were given questionnaires for completion.
- C. The questionnaires were distributed at the end of an introductory lecture on psychology.
- D. We decided that the easiest way to get the research completed was to give out the questionnaires during the lecture.

ANSWER: C

110. Ionic interactions are also known as \_\_\_\_\_.

- A. Ionic bridges.
- B. Hydrogen bridges.
- C. Salt brides.
- D. Co-valent bridges.

ANSWER: C

111. Disulphide bonds help to proteins.

- A. Bridge.
- B. Stabilize.
- C. degrade.
- D. synthesis.

ANSWER: B

112. Metal binding helps to stability of proteins.

- A. chemical.
- B. structural.
- C. functional.
- D. specific.

ANSWER: B

113. All proteins are packed in the interior region.

- A. loosely.
- B. closely.
- C. suppressed.
- D. tightly.

ANSWER: B

114. The final step of the designed 3D structure of proteins is analyzed by \_\_\_\_\_. a. high resolution NMR.

- A. high resolution NMR.
- B. NMR.
- C. ESR.
- D. GC-MS.

ANSWER: A

115. In which chemical the protein binding geometries are well known?

- A. Ca (II).
- B. Zn (II).
- C. Ca (II).
- D. Na (II).

ANSWER: B

116. What way is used to introduce a metal site to a protein?

- A. DNA fusion.
- B. Binary fission.
- C. genetic fusion.
- D. protein fusion.

ANSWER: C

117. Which is the best of the following?

- A. To cite the actual source you used rather than the source of the original study.
- B. Cite the original study in the text of the report but leave it out of the list of references because you have not actually read it.
- C. Cite the original study because that has the most detail.
- D. Cite the original study but then indicate where you got your information from.

ANSWER: D

118. What is the idea that knowledge comes from experience?

- A. rationalism.
- B. deductive reasoning.
- C. logic.
- D. empiricism.

ANSWER: D

119. Which of the following is not a basic assumption of science?

- A. Science cannot provide answers to all questions.
- B. It is possible to distinguish between more and less plausible claims.
- C. Researchers should follow certain agreed upon norms and practices.
- D. Science is best at solving value conflicts, such as whether abortion is immoral.

ANSWER: D

120. What are the five key objectives of science?

- A. prediction, summary, conclusion, explanation, description.
- B. influence, prediction, questions, exploration, answers.
- C. exploration, description, explanation, prediction, influence.
- D. questions, answers, prediction, explanation, summary.

ANSWER: C

121. Dock programme was developed by \_\_\_\_\_.

- A. Kuntz.

- B. Amber.
  - C. Franc.
  - D. Conord.
- ANSWER: A

122. Dock generate image of a receptor site by filling it with a set of overlapping spheres.
- A. positive.
  - B. negative.
  - C. neutral.
  - D. Zero.

ANSWER: B

123. Which scientific method focuses on testing hypotheses developed from theories?
- A. Deductive method.
  - B. Inductive method.
  - C. Hypothesis method.
  - D. Pattern method.

ANSWER: A

124. Which scientific method often focuses on generating new hypotheses and theories?
- A. Deductive method.
  - B. Inductive method.
  - C. Hypothesis method.
  - D. Pattern method.

ANSWER: B

125. Who developed an alternative approach to determine the functional groups of protein?
- A. Robert brown.
  - B. Miranker and Karplus.
  - C. Cartesian.
  - D. Good sell.

ANSWER: A

126. was first studied using 3D structure by site directed drug design.
- A. Haemoglobin.
  - B. Myoglobin.
  - C. Lysozyme.
  - D. Chymotrypsin.

ANSWER: A

127. Which of the following is not a correct statement?
- A. A test can be reliable without being valid
  - B. A test cannot be valid without being reliable
  - C. A test can be reliable and valid both
  - D. A test can be valid without being reliable.

ANSWER: B

128. In order to begin research, one must \_\_\_\_\_.
- A. solve the research problem.
  - B. start with a number of clear goals.
  - C. start with a number of predefined objectives.
  - D. have a well defined research method.

ANSWER: B

129. Proteins that have a redox function are involved in the transfer of \_\_\_\_\_.
- A. neutrons.
  - B. electrons.
  - C. protons.



D. ions.

ANSWER: B

130. Topology of a protein refers to the way arrangement of \_\_\_\_ in 3D dimensions and therefore referred to its tertiary structure.

A. amino acids.

B. peptides.

C. DNA

D. RNA.

ANSWER: A

131. Structure of proteins are obtained by\_\_\_\_\_.

A. X- ray diffraction.

B. NMR.

C. Spectrometry.

D. X- ray.

ANSWER: A

132. Research is considered to be more than just a way of skills, it is a \_\_\_\_\_.

A. planning to what, why and where type of questions to determine a goal.

B. a way of critical thinking about professional aspects of related to your work.

C. the research methods used within the research methodology

D. discovering the relationship between variables.

ANSWER: B

133. Protein kinases help in\_\_\_\_\_.

A. localization and targeting.

B. targeting.

C. degrading.

D. proteolysis.

ANSWER: A

134. Doing research requires drafting a working outline, which is \_\_\_\_\_.

A. having a predefined and clear-cut objective(s).

B. planning to get answers for what, why & where type of questions.

C. having a clear idea about the research problem solution.

D. none of the above.

ANSWER: B

135. Research objectives falls into a number of categories that include \_\_\_\_\_.

A. planning to get answers for what, why & where type of questions.

B. considering the logic behind the methods we use in the context of the research.

C. formulative, concept, and planning for research methods.

D. exploratory, descriptive, diagnostic and experimentation research.

ANSWER: D

136. Formulative research studies is a category of research that aims to \_\_\_\_\_.

A. achieve new insights of a concept.

B. analyze characteristics of something.

C. determine the frequency with which something occurs.

D. . test the relationship between variables.

ANSWER: A

137. Secondary structure of proteins has \_\_\_\_\_.

A. alpha helix & beta sheet.

B. alpha sheet & beta helix.

C. only Alpha helix.

D. only Beta Sheet.

ANSWER: A

138. Diagnostic research studies is a category of research that aims to \_\_\_\_\_.

- A. achieve new insights of a concept.
- B. analyze characteristics of something.
- C. determine the frequency with which something occurs.
- D. test the relationship between variables.

ANSWER: C

139. MALDI stands for \_\_\_\_\_.

- A. Matrix Associated Laser Desorption/Ionization.
- B. Matrix Assisted Laser Desorption/Ionization.
- C. Matrix Assisted Laser Deamination/Ionization.
- D. Matrix Associated Laser Deamination/Ionization

ANSWER: A

140. A crude extract is separated on a \_\_\_\_\_ gel.

- A. 2D.
- B. 3D.
- C. 4D.
- D. 5D.

ANSWER: A

141. Proteome mining helps in \_\_\_\_\_ study.

- A. drug discovery.
- B. drug delivery.
- C. proteolysis.
- D. drug target.

ANSWER: A

142. Descriptive research studies is a category of research that aims to \_\_\_\_\_.

- A. achieve new insights of a concept.
- B. analyze characteristics of something.
- C. determine the frequency with which something occurs.
- D. test the relationship between variables.

ANSWER: B

143. Research aims for finding answers to questions it implies \_\_\_\_\_.

- A. a framework of philosophies.
- B. using valid and reliable methods and techniques.
- C. unbiased design.
- D. all the above.

ANSWER: D

144. If the population on which a study is based is such that all its units can be reached, it is termed as

- A. Target population.
- B. Accessible population.
- C. Homogeneous population.
- D. Heterogeneous population.

ANSWER: B

145. What is the aim of educational research?

- A. It adds to their academic qualifications.
- B. It makes them wiser
- C. It makes them better teachers
- D. It enables them to make best possible judgments about what should be taught and how.

ANSWER: D

146. In order to make the research reliable, it requires that \_\_\_\_\_.
- A. there is no deliberate attempt to either to conceal or highlight something.
  - B. quantitative and qualitative methods are to be used.
  - C. repeatability and accuracy are provided for the quality of measurement procedures used.
  - D. the solution to the research problem is known in advance.

ANSWER: C

147. The main difference between research and non-research is \_\_\_\_\_.
- A. the type of skills we use to discover something.
  - B. the utilization of acceptable scientific methodology to solve problems to create new knowledge.
  - C. the quantitative and qualitative methods that are to be used.
  - D. all the above.

ANSWER: B

148. The formula used to calculate the melting temperature  $T_m$  in primer designing is  $T_m$  \_\_\_\_\_.
- A.  $2(A+T)+4(G+C)$ .
  - B.  $3(A+T)+(G+C)$ .
  - C.  $4(A+T)+(G+C)$ .
  - D.  $6(A+T)+(G+C)$ .

ANSWER: A

149. The melting temperature should not exceed \_\_\_\_\_ degree Celcius in primer designing.
- A. 150.
  - B. 110 .
  - C. 85.
  - D. 45.

ANSWER: C

150. Wallac rule in primer designing is \_\_\_\_\_.
- A.  $T_m=2(A+T)+4(G+C)$ .
  - B.  $3(A+T)+(G+C)$ .
  - C.  $6(A+T)+(G+C)$ .
  - D.  $4(A+T)+(G+C)$ .

ANSWER: A

151. G +C content should be \_\_\_\_\_ in primer designing.
- A. 40 to 60%.
  - B. 50 to 80%.
  - C. 85 to 90%.
  - D. 0 to 0%.

ANSWER: A

152. The nature of the 3 prime end of the primer is \_\_\_\_\_.
- A. crucial.
  - B. narrow.
  - C. complementary.
  - D. narrow and complementary.

ANSWER: A

153. Cleavage of restriction site located at the \_\_\_\_\_ of the DNA molecule.
- A. 3 prime termini.
  - B. 5 prime termini.
  - C. 3 prime and 5prime termini.
  - D. none of the above.

ANSWER: B

154. Pick out the primer designing software.
- A. Primer Premier.

- B. Primer blast.
- C. Primer Premier and Primer blast.
- D. Gene blast.

ANSWER: C

155. Length of the primer is always \_\_\_\_ nucleotides.

- A. 18-25.
- B. 45-55.
- C. 30-40.
- D. 30-50.

ANSWER: A

156. The chief goal of the primer design is \_\_\_\_\_.

- A. specificity.
- B. sensitivity.
- C. 3 prime and 5 prime termini.
- D. no specificity.

ANSWER: A

157. Biased research refers to \_\_\_\_\_.

- A. drawing conclusions by introducing one's own vested interest.
- B. no deliberate attempt to either conceal or highlight something.
- C. repeatability and accuracy are provided for the quality of measurement procedures used.
- D. each step of the research is valid and objective.

ANSWER: A

158. PCR is defined as \_\_\_\_\_.

- A. Polymerase chain reaction.
- B. gene cloning.
- C. recombinant technology.
- D. poly cyclic reaction.

ANSWER: A

159. Descriptive research is the type of research that \_\_\_\_\_.

- A. is made for performing the basic or pure research; it is a theoretical research.
- B. is intended for finding some solution to the problem considered.
- C. includes fact-finding enquires and surveys.
- D. uses available information as the base to make the further critical evaluation.

ANSWER: C

160. Analytical research is the type of research that \_\_\_\_\_.

- A. is made for performing the basic or pure research; it is a theoretical research.
- B. is intended for finding some solution to the problem considered.
- C. includes fact-finding enquires and surveys.
- D. uses available information as the base to make the further critical evaluation.

ANSWER: D

161. Applied research is the type of research that \_\_\_\_\_.

- A. is made for performing the basic or pure research; it is a theoretical research
- B. is intended for finding some solution to the problem considered.
- C. includes fact-finding enquires and surveys.
- D. uses available information as the base to make the further critical evaluation.

ANSWER: B

162. Fundamental research is the type of research that \_\_\_\_\_.

- A. is made for performing the basic or pure research; it is a theoretical research.
- B. is intended for finding some solution to the problem considered.
- C. includes fact-finding enquires and surveys.

D. uses available information as the base to make the further critical evaluation.

ANSWER: A

163. What are the parameters analysed for primer designing using Primer Premier software?

- A. self complementarity.
- B. Primer dimer.
- C. Hair pin loop formation
- D. all of the above.

ANSWER: D

164. Research can be classified from three perspectives \_\_\_\_\_.

- A. philosophies, validity and unbiased.
- B. controlled, systematic and empirical.
- C. rigorous, valid and critical.
- D. application, objectives and inquiry mode used.

ANSWER: D

165. How will you detect the amplified PCR product?

- A. Agarose gel electrophoresis.
- B. RNA Polymerase.
- C. SDS-PAGE.
- D. none of the above.

ANSWER: A

166. What is the plasmid?

- A. Extra chromosomal DNA.
- B. RNA Polymerase.
- C. Double strand DNA.
- D. none of the above.

ANSWER: A

167. Give an example of plasmid vectors?

- A. PUC18.
- B. PRSET B.
- C. PBR322.
- D. all of the above.

ANSWER: D

168. What is the software used for plasmid construction?

- A. CHYMMERA.
- B. Primer premier.
- C. Gene Blast.
- D. none of the above.

ANSWER: D

169. Pick out the example of scoring matrix in protein folding?

- A. PAM 250.
- B. PRSET B.
- C. PB322.
- D. all of the above.

ANSWER: D

170. The research processes have certain characteristics. One of the statements below are not part of these characteristics.

- A. controlled and systematic.
- B. quantitative and qualitative.
- C. critical and empirical.
- D. rigorous and valid.

ANSWER: B

171. Research methodology can be similar to undertaking a journey. It can be thought of as \_\_\_\_\_.
- A. an attempt to discover or establish a relationship between two or more aspects of a situation.
  - B. structured enquiry that utilizes acceptable methods.
  - C. the path to finding answers to your research questions.
  - D. having a clear-cut goals that have a clear path to follow in order to achieve them.

ANSWER: C

172. The most essential step in the research process that determines every step that follows is to \_\_\_\_\_.
- A. decide whether qualitative or quantitative methods are to be used.
  - B. review the literature in order to acquaint yourself with knowledge.
  - C. have a clear idea about the conclusions you need and drafting a plan to achieve them.
  - D. formulate a problem statement.

ANSWER: B

173. Research problem formulation in applied research, the research process \_\_\_\_\_.
- A. revolves around four areas: people, problems, programs and phenomena.
  - B. considers the empirical nature of the research questions.
  - C. must study the population and the subject area.
  - D. none of the above.

ANSWER: D

174. Time scale of protein folding is popularly known as \_\_\_\_\_.
- A. FASTA.
  - B. Multiple sequence alignment.
  - C. Levinthal Paradox.
  - D. all of the above.

ANSWER: C

175. What are the models used to investigate protein folding?
- A. Multiple lattice model.
  - B. Single lattice model.
  - C. Atomistic model.
  - D. both a and b.

ANSWER: D

176. The central theme in scientific method is that all evidence must be \_\_\_\_\_.
- A. empirical, based on evidence.
  - B. theoretical, based on theory.
  - C. research problem dependent.
  - D. all the above.

ANSWER: C

177. Strong unfolding condition is such as \_\_\_\_\_.
- A. low temperature.
  - B. high temperature.
  - C. very high temperature.
  - D. very low temperature.

ANSWER: B

178. DNA Microarray technology is used to \_\_\_\_\_ in response of physiological, pathological or pharmacological vibrations
- A. amplify the genes.
  - B. changes in gene.
  - C. monitor changes in gene expression
  - D. monitor for protein expression.

ANSWER: C

179. When considering a research problem, it is extremely important to select a topic that \_\_\_\_\_.

- A. you can manage within the time you have.
- B. you can manage within the resources you have.
- C. you can narrow down to something manageable and specific.
- D. all the above.

ANSWER: D

180. In order to formulate a research problem the researcher is required to have a \_\_\_\_\_ subject area of the research.

- A. great deal of knowledge in the exact.
- B. great deal of knowledge in the broad.
- C. reasonable level of knowledge in the exact.
- D. reasonable level of knowledge in the broad.

ANSWER: D

181. GLP defined as \_\_\_\_\_.

- A. Good Laboratory Practice.
- B. Good labors practice.
- C. Goods labors practice practice.
- D. Good laboratory production.

ANSWER: A

182. What is GMP?

- A. Good management practice.
- B. Good manufacturing practice.
- C. Good maintaining practice.
- D. Good marketing practice.

ANSWER: B

183. QAU stands for \_\_\_\_\_.

- A. Quality assuring Unit.
- B. Quality assurance Unit.
- C. Guaranty assurantee Unit.
- D. quality assessment unit.

ANSWER: B

184. Reviewing the literature can be \_\_\_\_\_.

- A. bring clarity and focus to your research problem.
- B. improve your methodology.
- C. broaden your knowledge.
- D. all the above.

ANSWER: D

185. Untreated bio hazardous wastes shall be handled by \_\_\_\_\_.

- A. treated by chemically
- B. treated by heat.
- C. Properly treated.
- D. treated by UV.

ANSWER: C

186. Solid Biohazards wastes are put and handled with \_\_\_\_\_.

- A. plastic bags.
- B. biohazardous bags.
- C. cloth bags.
- D. leather bags.

ANSWER: B

187. Animal caracares and body parts must be \_\_\_\_\_.

- A. heat treatment.
- B. treated properly.
- C. treated chemically.
- D. treated with water.

ANSWER: B

188. What is the meaning of research?

- A. Search for knowledge on a specific topic.
- B. Scientific and systematic search.
- C. Doctoral findings.
- D. Search for scientific reason.

ANSWER: A

189. What is the objective of the research?

- A. To discover answer to question through the application of scientific procedure.
- B. Scientific and systematic search.
- C. To discover answer to question.
- D. none of the above.

ANSWER: A

190. What is descriptive analysis?

- A. To discover answer to question through the application of scientific procedure.
- B. Collection of data quantitatively.
- C. To discover answer to question.
- D. To describe the data.

ANSWER: B

191. What is the aim of descriptive analysis?

- A. To discover answer to question through the application of scientific procedure.
- B. Scientific and systematic search.
- C. To summarize the data set.
- D. all of the above.

ANSWER: C

192. How many characteristic features are there in descriptive analysis?

- A. 4.
- B. 5.
- C. 6.
- D. 3.

ANSWER: D

193. What are the characteristic of descriptive analysis?

- A. Distribution.
- B. Tendency.
- C. Dispersion.
- D. all of the above.

ANSWER: D

194. What is distribution?

- A. Summary of the frequency of individual.
- B. Ranges of values for a variable.
- C. Ranges of values for a invariable
- D. both a and b.

ANSWER: D

195. How many types in central tendency?

- A. 3.



- B. 4.
- C. 5.
- D. 6.

ANSWER: A

196. What are the three major types of central tendency?

- A. Mean.
- B. Mode.
- C. Meadine.
- D. Coefficient.

ANSWER: D

197. What are the two common measures of deviation?

- A. Range.
- B.
- C. Mode.
- D. both a and b.

ANSWER: D

198. What is CSIR?

- A. Centre for Science and Industrial Research.
- B. Council for Scientific and Industrial Research.
- C. Council for Science and Integrated Research.
- D. Council for Social and Integrated Research.

ANSWER: B

199. What are the funding agency in India?

- A. ICMR.
- B. DST.
- C. DBT.
- D. all of the above.

ANSWER: D

200. What is ICMR?

- A. Indian Council of Medical Research.
- B. Indian Centre of Medical Research.
- C. Indian Council of Medical and Occupational occupational research.
- D. Indian Council of Mathematical Research.

ANSWER: A

201. What is JRF?

- A. Junior Research Fellow.
- B. Junior Research Fund.
- C. Junior Recognised Fellow.
- D. joint Research Fellow.

ANSWER: A

202. What is SRF?

- A. Senior Research Fellow.
- B. Scientific Research Fund.
- C. Scientific Research Fellow.
- D. Social Research Fund.

ANSWER: A

203. SLET stand for\_\_\_\_\_.

- A. State Level Eligibility Test.
- B. State level Exam Test.
- C. Scientific Level Eligibility Test.

D. Social Level Eligibility Test.

ANSWER: A

204. NET is strand for\_\_\_\_\_.

- A. National Eligibility Test.
- B. National Entrance Test.
- C. National English Test.
- D. all of the above.

ANSWER: A

205. What is ICAR?

- A. Indian Council of Academic Research.
- B. Indian Council of Agriculture Research.
- C. Indian Council of Academic Research.
- D. Indian Council of Administrative Research.

ANSWER: B

206. What is IAS?

- A. Indian Administrative Service.
- B. Indian Academic Service.
- C. Indian Analytical Service.
- D. none of the above.

ANSWER: A

207. DBT strand for\_\_\_\_\_.

- A. Department of Biological Techniques.
- B. Department of Biological Science and Technology.
- C. Department of Biotechnology.
- D. Department Bioprocess Technology.

ANSWER: C

208. What is DST?

- A. Department Science and Technology.
- B. Department of Soil and Technology.
- C. Department of Sonographic Technology.
- D. none of the above.

ANSWER: A

209. What is DOD?

- A. Department of Ocean Development.
- B. . is a funding agency for Agriculture.
- C. funding agency for Computer Science.
- D. funding agency for Physical Chemistry.

ANSWER: A

210. What is TNPSC

- A. Tamil Nadu Public Service Commission.
- B. Tamil Nadu Police Service Commission.
- C. Tamil Nadu Political Science Commission.
- D. none of the above.

ANSWER: A

211. What is IPS?

- A. Indian Police Service.
- B. Indian Public Service.
- C. Indian Political Service.
- D. Indian Penal Service.

ANSWER: A

212. What is WHO?

- A. World Health Organization.
- B. World Historical Organization.
- C. World Health and Development Organization.
- D. all of the above.

ANSWER: A

213. What is IFS?

- A. Indian Forest Department Service.
- B. Indian Food Service.
- C. Indian Fire Service.
- D. none of the above.

ANSWER: A

214. DNA arrays with hundreds of thousands of \_\_\_\_\_.

- A. different probes.
- B. same probes.
- C. different chips.
- D. same chips.

ANSWER: A

215. In micro arrays the automated production process yields arrays with highly \_\_\_\_\_ which induces user set up time.

- A. not reproducible.
- B. reproducible.
- C. highly reproducible.
- D. moderate reproducible.

ANSWER: C

216. Physical design of DNA arrays consists of \_\_\_\_\_ steps.

- A. 4.
- B. 5.
- C. 2.
- D. 6.

ANSWER: A

217. The group that receives the experimental treatment condition is the \_\_\_\_\_ group.

- A. Experimental.
- B. Control.
- C. Participant.
- D. Independent.

ANSWER: A

218. What is the program at the NCBI used to visualize the open reading frames in DNA sequences?

- A. Different probes.
- B. Gen mark.
- C. ORF finder.
- D. Primer premier.

ANSWER: C

219. The word DATA is used to denote \_\_\_\_\_ of an experiment or survey.

- A. the numerical results.
- B. results.
- C. graphical results.
- D. graphical datas.

ANSWER: A

220. The RAW DATA is used to distinguish the original information from \_\_\_\_\_.

- A. Derived .
- B. Processed.
- C. Tansformed.
- D. all of the above.

ANSWER: D

221. What are the forms of data?

- A. Qualitative and quantitative data.
- B. Continuous and discrete data.
- C. Primary and secondary data.
- D. All of the above.

ANSWER: D

222. Each piece of data clearly belongs to one \_\_\_\_\_.

- A. classification.
- B. category.
- C. classification or category.
- D. types.

ANSWER: C

223. The numerical data or quantitative data results from \_\_\_\_\_.

- A. counting.
- B. measuring.
- C. counting or measuring.
- D. tabulating.

ANSWER: C

224. A set of data contains only a few entries, a simple listing of the observations might be sufficient for \_\_\_\_\_.

- A. interpreting the data.
- B. graphical.
- C. tabulate.
- D. bar diagram.

ANSWER: A

225. The data which has been shown in the tabular form may be displayed in pictorial form by using a \_\_\_\_\_.

- A. a graph.
- B. a table.
- C. a representation data.
- D. a representation of results.

ANSWER: A

226. What are the types of presentation of data \_\_\_\_\_.

- A. histogram or frequency polygon.
- B. Bar diagram or bar graph.
- C. Cumulative frequency curve or ogive.
- D. all of the above

ANSWER: D

227. Histograms also be drawn against \_\_\_\_\_.

- A. a circular baseline.
- B. Bar diagram or bar graph.
- C. a straight baseline.
- D. points separately.

ANSWER: A

228. Lines were drawn to line the \_\_\_\_\_.

- A. points together.
- B. points separately.
- C. a straight baseline.
- D. narrow line.

ANSWER: A

229. Pie charts are different type of \_\_\_\_\_.

- A. graph.
- B. bar graph.
- C. a straight baseline.
- D. tables.

ANSWER: A

230. Polar coordinates are a useful variant of the familiar \_\_\_\_\_ when one parameter is orientation.

- A. a circular baseline graph.
- B. bar diagram or bar graph.
- C. two axis graph.
- D. bargraph or tables.

ANSWER: C

231. Histograms takes rather longer to draw \_\_\_\_\_.

- A. line.
- B. dot graphs.
- C. line or dot graphs.
- D. tables.

ANSWER: C

232. Good manufacturing Practice or GMP is a part of a \_\_\_\_\_.

- A. quality system.
- B. quantity system.
- C. a straight baseline.
- D. a straight lines.

ANSWER: A

233. GMP is covering manufacture and testing of \_\_\_\_\_.

- A. pharmaceutical dosage forms or drugs.
- B. active pharmaceutical ingredients
- C. diagnosis, food and medical devices.
- D. all of the above.

ANSWER: D

234. The main factors of GMP are \_\_\_\_\_.

- A. Documentation.
- B. record keeping.
- C. personal qualification.
- D. all of the above.

ANSWER: D

235. Most of the GMP requirement is very \_\_\_\_\_.

- A. general.
- B. open ended.
- C. each manufacturer to decide individually how to best implement the necessary controls.
- D. all of the above.

ANSWER: D

236. What is the important point of GMP \_\_\_\_\_.

- A. documentation of every aspect of the process.

- B. activities and operations involved with manufactures.
- C. both a and b.
- D. documentation of end of the process.

ANSWER: C

237. GMP is good business \_\_\_\_\_.

- A. tool.
- B. quantity system tool.
- C. quality control tool
- D. quality assuring system.

ANSWER: A

238. What are the other good practices are \_\_\_\_\_.

- A. good laboratory practice.
- B. good clinical practice.
- C. good regulatory practice.
- D. all of the above.

ANSWER: D

239. GLP applies to of non clinical studies conducted for the assessment for safety or efficacy of chemical to \_\_\_\_\_.

- A. man.
- B. animals.
- C. environment.
- D. all of the above.

ANSWER: D

240. Biological waste means any \_\_\_\_\_ waste including its container and any intermediates product, which is generated during the diagnosis, treatment or immuniation of human beings or animals.

- A. liquid.
- B. solid.
- C. liquid or solid.
- D. plastics.

ANSWER: C

241. \_\_\_\_\_ nature of the waste components, their toxicity and potential hazard are different methods/options for their treatment/disposal.

- A. Toxicological.
- B. Physiochemical and biological.
- C. Environment.
- D. Chemical.

ANSWER: B

242. What are the components of biomaterial waste in human?

- A. Toxicological wastes.
- B. Tissues.
- C. Organs and body parts.
- D. Excretory and body fluids.

ANSWER: C

243. What are the micro biology and biotechnology wastes?

- A. Laboratory cultures.
- B. Microorganisms.
- C. Human and animal cell cultures, toxins.
- D. All of the above.

ANSWER: D

244. Give the examples of solid biological waste \_\_\_\_\_.

- A. dressing, bandages, plaster cast.
- B. materials contaminates with blood.
- C. disposable items like tubes, cottons.
- D. all of the above.

ANSWER: D

245. \_\_\_\_\_ of patients due to spread of infection.

- A. Toxicological.
- B. Physiochemical and biological.
- C. Hospital acquired infection (HAI).
- D. Laboratory acquired infection.

ANSWER: C

246. Majority of the cave establishment are located within \_\_\_\_\_.

- A. the municipal system.
- B. the corporate system.
- C. hospital system.
- D. laboratory system.

ANSWER: A

247. What is the storage temperature for DNA for several years?

- A.
- B.
- C.
- D.

ANSWER: A

248. What is the method for blood collection for blood transfusion?

- A. Vein puncture.
- B. Finger puncture.
- C. Heart puncture.
- D. Laboratory system.

ANSWER: A

249. What is the method used for the tissue collection in liver?

- A. Vein puncture.
- B. Biopsy.
- C. Transplantation.
- D. Surgical method.

ANSWER: B

250. Good Manufacturing practice principles are followed by \_\_\_\_\_.

- A. OECD.
- B. DOT.
- C. DAT.
- D. laboratory system.

ANSWER: A

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