NAVRACHANA UNIVERSITY
a UGC recognized University

School: School of Science
Program/s: Master of Science
Year: 2nd **Semester:** I
Examination: End Semester Examination
Examination year: December - 2022

Course Code: AIS101 **Course Name:** Biophysics and Biostatistics
Date: 02/12/2022
Time: 08:30 AM to 10:30AM

Total Marks: 40
Total Pages: 2

Instructions:

➔ *Write each answer on a new page*
➔ *Draw neat and well-labelled diagrams wherever required*
➔ ** COs=Course Outcome mapping. # BTL=Bloom's Taxonomy Level mapping*

Q. No.	Details	Marks	COs*	BTL#
Q.1	Choose the correct option. 1. _____represent source/s for secondary data collection a. policy documents b. news paper articles c. research articles d. None of the above 2. _____is/are the example/s of ordinal data. a. race/gender b. rankings c. weight/height measures d. All of the above 3. ___is/are the example/s of continuous data. a. race/gender b. rankings c. weight/height measures d. All of the above 4. _____represents an over all reflection of a sample a. mean b. median c. mode d. None of the above 5. _____reflects diversity/spread of your data points in your sample/population a. range b. variance c. standard deviation d. All of the above 6. _____chromatography provides separation of proteins/molecules on the basis of receptor-ligand interaction. a. affinity chromatography b. ion-exchange chromatography c. gel-permeation chromatography d. none of the above	12	CO1 CO2 CO3 CO4 CO5	BTL1 BTL2 BTL3

7. Proteins and nucleic acids absorb highest at _____ and _____ respectively

   a. 260nm and 280 nm   b. 280 and 260 nm
   c. 340 and 280 nm   d. none of the above

8. The Rf value in paper chromatography referes to_____

   a. running front   b. reference for
   c.relative front   d. none of the above

9. _____is used as a source for electrons during TEM and SEM.

   a. Osmium tetroxide   b. tungsten filament
   c. platinum filament   d. All of the above

10. _____represents an over all differences/spread of sample values

   a. mean   b. median
   c. mode   d. None of the above

11. In fluorescence microscopy, transmission of fluorescence while retardation of excitation light is achieved by_
   a. Emission filter   b. Excitation filter
   c.Phase plate   d. none of the above

12. During primary data collection_____method faces with the limitation of literacy standards of the subjects.
   a. key-information interview   b. In-depth interview
   c. case studies   d. none of the above

Q.2	Answer the following in short. **Any six**			
	1. Define data. 2. What is the working principle of phase contrast microscopy? 3. What are the limitations of fluorescence microscopy? 4. What are the applications of gel permeation chromatography? 5. Enlist disadvantages of data representation using tables. 6. Define continuous type of data sets. 7. What are nominal and ordinal data types? 8. What are the key differences between mean, median and mode?	12	CO1 CO2 CO3 CO4 CO5	BTL1 BTL2 BTL3

Q.3	Answer the following in detail. **Any four**			
	1. How radioactivity is helpful in deciphering aging of organic remains? 2. Enlist key features of Transmission electron microscopy and Scanning electron microscopy. 3. What are the limitations of paper chromatography? 4. Explain in detail working principle of UV spectroscopy. 5. Provide a comprehensive comparative between primary sources of data and secondary sources of data.	16	CO1 CO2 CO3 CO4 CO5	BTL1 BTL2 BTL3