ENTRANCE EXAMINATION: ACADEMIC SESSION JANUARY 2020

PROGRAM: PhD (Health Sciences)

Time: 90 minutes

Max. Marks: 100

(Select the most appropriate answer)
(There are no negative marks for wrong answers)

1. Name of the Launch Vehicle used in **Chandrayaan-2**
   A. ROVER vehicle
   B. PSLV
   C. GSLV
   D. ORBITOR

2. Symbol for S. I. Unit of temperature
   A. °C
   B. K
   C. °F
   D. All

3. 10^{-12} is represented by
   A. pico
   B. tera
   C. femto
   D. peta

4. ISO stands for
   A. Indian Standards Organization
   B. International Organization for Standardization
   C. International Standard Organization
   D. Indian Organization for Standardization

5. Under the constitutional provisions, which authority has the power regarding the formation of new states or altering the boundaries of existing states?
   A. Election Commission of India
   B. Delimitation Commission of India
   C. President of India
   D. Parliament

6. Which of the following is depicted in a Two thousand rupees Indian currency note?
   A. Rani ki vav
   B. Mars planet
   C. Chandrayaan
   D. Sanchi Stupa

7. Who is the chairman of the Chiefs of Staff Committee?
   A. General Bikram Singh
   B. General Bipin Rawat
   C. Admiral Karambir Singh
   D. Air Chief Marshal Rakesh Kumar Singh Bhaduria

8. International Astronomical Union named a minor planet 2006 VP32 (number -300128), between Mars and Jupiter after the following Indian classical singer:
   A. Pandit Jasraj
   B. Pandit Ravi Shankar
   C. Pandit Tansen
   D. None of the above

9. 2020 Breakthrough prize goes to Scientists who first captured the image of
   A. Pentacene molecule
   B. Black hole
   C. A rare form of carbon monoxide in the dust and gas disc around a young star.
   D. Interstellar comet

10. Which among these are brain boosting nutrients?
    A. Essential fatty acids
    B. Vitamin C and B-complex
    C. Amino acid
    D. All of the above

11. Malala Yousafzai- an activist for education of women and children is also the youngest Nobel laureate. She hails from:
    A. Iran
    B. Syria
    C. Jordan
    D. Pakistan

12. The following is a palindrome:
    A. DIVIDED
    B. MALAYALAM
    C. AQUA
    D. DRESSED

13. Who is the ace Indian shuttler who is the first Indian to win Badminton World Champions hips gold:
    A. Saina Nehwal
    B. P.V. Sindhu
    C. Sania Mirza
    D. Mithali Raj

14. The following was demoted to the status of a 'dwarf planet' in 2006:
    A. Uranus
    B. Mercury
    C. Pluto
    D. Neptune

15. The following is the state bird of Kerala:
    A. Great hornbill
    B. Rufous treepie
    C. Jungle babbler
    D. Kingfisher

16. What does UNESCO stand for?
    A. United Nations Economic, Socio-Cultural Organization
    B. United Nations Educational, Scientific and Cultural Organization
    C. United Nations Employment, Societal and Corporate Organization
    D. None of the above

17. National Science Day is celebrated in India on 28 Feb every year in the memory of:
    A. Sir C.V. Raman
    B. Dr. A.P.J. Abdul Kalam
    C. Dr. Har Gobind Khorana
    D. Dr. Srinivasa Ramanujan

18. India's highest civilian award Bharat Ratna for the year 2019 has been awarded to:
    A. Bhupen Hazarika
    B. Pranab Mukherjee
    C. Nanaji Deshmukh
    D. All of the above

19. ISRO's mission Chandrayaan-2 has a lander named:
    A. Pragyan
    B. Vikram
    C. Dhawan
    D. Sivan

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20. Which of the following article of Constitution of India has been revoked recently?
    A. Article 330
    B. Article 350
    C. Article 370
    D. Article 390

21. Pulitzer price established in
    A. 1917
    B. 1922
    C. 1928
    D. 1918

22. Logo for World Wide Fund for nature
    A. Deer
    B. Panda
    C. Camel
    D. Lion

23. The Flying Sikh of India
    A. Mohinder Singh
    B. Joginder Singh
    C. Yuvarag Singh
    D. Milkha singh

24. ISRO's most powerful rocket to date
    A. PSLV-XL
    B. GSLV Mk-III
    C. GSLV-Mach2
    D. None of the above

25. Spaceflight that first landed humans on the Moon
    A. Apollo 11
    B. Apollo 13
    C. Apollo 8
    D. Apollo 9

26. Manesh, the son of Arun is married to Sibi, whose sister Jisha is married to Hari, the brother of Manesh. How is Jisha related to Arun?
    A. Daughter in law
    B. Cousin
    C. Sister
    D. Sister in law

27. The year in which the currency symbol of Indian rupee was adopted?
    A. 2000
    B. 2010
    C. 2020
    D. None of the above

28. First Indian to Preside over the International Court of Justice?
    A. Nagendra Singh
    B. Dr. Hardayal
    C. Neeru Chadha
    D. None of the Above

29. Nehru Cup was associated with:
    A. Snake Boat Race
    B. Football
    C. Hockey
    D. Swimming

30. Founder of the Red Cross was?
    A. Henry Durant
    B. Trigwilly H
    C. Baden Powell
    D. Frederick Parasse

31. What is the current population of India?
    A. 107 crores
    B. 10.7 crores
    C. 15.7 crores
    D. 137 crores

32. Frances H. Arnold won the Nobel Prize in 2018 for:
    A. Chemistry
    B. Physics
    C. Economic Science
    D. Medicine

33. The present Governor of Kerala
    A. P Sathasivam
    B. R. L. Bhatia
    C. Sheila Dikshit
    D. Arif Mohammad Khan

34. A cuboid has six sides of different colours. The red side is opposite to black. The blue side is adjacent to white. The brown side is adjacent to blue. The red side is face down. Which one of the following would be the opposite to brown?
    A. Red
    B. Black
    C. White
    D. Blue

35. Mangalyaan intend for
    A. Jupiter Orbiter Mission
    B. Mars Orbiter Mission
    C. Mercury Orbiter Mission
    D. Saturn Orbiter Mission

36. Nanomaterials are materials of which a single unit is sized:
    A. < 100nm
    B. < 1000nm
    C. < 10nm
    D. < 1nm

37. Of all the 3-digit numbers given below which one is divisible by 6?
    A. 149
    B. 150
    C. 151
    D. 166

38. Distance between two stations, X and Y is 778 km. A train covers the journey from X to Y at 84 Km per hour and returns back to X with a uniform speed of 56 Km per hour. Find the average speed of the train during the whole journey?
    A. 67.0 Km/hr.
    B. 67.2 Km/hr.
    C. 69.0 Km/hr.
    D. 69.2 Km/hr.

39. The sum of three numbers is 98. If the ratio of the first to second is 2:3 and that of the second to the third is 5:8, then the second number is?
    A. 20
    B. 30
    C. 48
    D. 58

40. When you reverse the age of the father you will get the age of the son. One year ago the age of the father was twice that of son's age. What are the current ages of son and father?
    A. 37 and 73
    B. 24 and 42
    C. 13 and 31
    D. 15 and 51

41. When doing research amongst young adults aged below 18, consent is taken from the parents. Which of these forms is a mechanism of indicating respect for the autonomy of the individual?

    A. Assent form
    B. Consent form
    C. Information form
    D. Annexure form

42. Stakeholder committee for hospital management of government hospitals is called _____.

    A. Village Health Nutrition and Sanitation Committee
    B. National Health Mission
    C. Rogi Kalyan Samiti
    D. Kudumbasree

43. The first step of qualitative analysis of reading through texts and marking segments with meaningful labels is known as:

    A. Memoing
    B. Categorising
    C. Coding
    D. Labelling

44. Fairness and justice in the distribution of benefits, power, resources and responsibilities between women and men according to their needs' is

    A. Gender equity
    B. Gender equality
    C. Gender parity
    D. Gender equanimity

45. 500 women aged 40 – 54 who present for routine check-ups are asked about their meat consumption. 20% of the women turn out to be vegetarian. During the ensuing 5 years, 5 vegetarians and 43 non-vegetarians develop colorectal cancer. Which of the following best describes the study design?

    A. Case series report
    B. Cohort study
    C. Case-control study
    D. Cross-sectional study

46. All other factors being constant, the prevalence of a disease will decrease if

    A. The incidence of the disease increases
    B. The population in which the disease is measured increases
    C. The recovery rate from the disease increases
    D. The survival time with the disease increases

47. Which one of these methods is not an approach of qualitative research?

    A. Phenomenological approach
    B. Narrative approach
    C. Bayesian Approach
    D. Ethnographic approach

48. A hierarchical system in which cultural, political, and economic structures are dominated by males is

    A. Elitist sexist model
    B. Gender division
    C. Pluralist model
    D. Patriarchy

49. The seminal work of Abhay Bang is in the field of _____

    A. Home-based newborn care
    B. DOTS for Tuberculosis
    C. Foot care of filariasis
    D. Tobacco control legislation

50. Random errors associated with measuring X and Y are 10% and 2%, respectively. What is the percentage random error in X/Y?

    A. 6.0
    B. 12.0
    C. 9.8
    D. 8.0

51. What is the most important quality component of a database?

    A. variables
    B. metadata
    C. records
    D. language

52. By taking a level of significance of 5%, it means that

    A. We are 5% confident that the results have not occurred by chance
    B. We are 95% confident that the results have not occurred by chance
    C. We are 95% confident that the results have occurred by chance
    D. We are 95% confident that the results obtained are invalid

53. If in a group of 457 patients, for a risk factor we calculated a Relative Risk RR= 12.74, the possibility of developing the disease being investigated is:

    A. very high when exposed to the factor
    B. very small when exposed to the factor
    C. the same in the case of exposure in the case of non-exposure
    D. lower in the exposed than in the unexposed, RR being less than 100

54. For a medical termination of pregnancy (MTP) of an adult woman in sound health, whose consent is mandatory among the ones listed below

    A. Only the woman concerned
    B. The woman and the father of the unborn
    C. The woman, her parents and the father of the unborn
    D. The woman and her in-laws

55. The shape of the t distribution depends on _____

    A. degree of freedom
    B. type of variable
    C. range of values
    D. normality

56. Standard normal distribution is applicable to any random variable that takes values between ___ and ____.

    A. 0 and 1
    B. 0 and ∞
    C. $-\infty$ and 0
    D. $-\infty$ and ∞

57. Qualitative research enables us to answer which of these types of questions?

    A. It answers the how many type of questions.
    B. It answers the why something happens type of question
    C. It provides an answer to how often a phenomenon happens
    D. It provides an answer to the rarity of an event

58. Which of these names is not that of a social scientist?

    A. MN Srinivas
    B. Gayatri Spivak
    C. C Gopalan
    D. Amartya Sen

59. A researcher stays with a community for a prolonged period to understand their values and beliefs as part of a research exercise. The means of data collection is mostly based on observations and clarificatory conversations with key persons of the community. This kind of research is:

    A. Ethnography
    B. Phenomenology
    C. Epigraphy
    D. Ethnomethodology

60. For a positively skewed smooth distribution (skewed to the right), which of the following is correct?

    A. Mean>Median
    B. Median>Mean
    C. Mode>mean
    D. Mode>median

61. In logistic regresssion models, the regression coefficents are equal to _____?

    A. Relative risk
    B. Logarithm of Relative Risk
    C. Odds Ratio
    D. Logarithm of Odds Ratio

62. Globally, the most common cause of cancer death is due to _____.

    A. breast cancer
    B. stomach cancer
    C. colorectal cancer
    D. lung cancer

63. What is the average life expectency of a person born today in the world?

    A. 92 years
    B. 82 years
    C. 72 years
    D. 62 years

64. The sum of digits of a two digit number is 9. If the fraction formed by taking 9 less than the number as numerator and 9 more than the number as denominator is ¾, what is the number?

    A. 63
    B. 36
    C. 54
    D. 67

65. A sample of 5 body weights (in Kg) is as follows: 116, 168, 124, 132, and 110. The sample median is:

    A. 124
    B. 116
    C. 132
    D. 130

66. When one does research on people who are like the researcher or among ones own culture, it may be biased due to:

    A. Insider's bias
    B. Narrator's bias
    C. Cultural bias
    D. Outsider's bias

67. Which of the following 95% confidence intervals for a difference in means between 2 populations implies that the P value is <.05, for a test with null value=0?

    A. (-2.5, 3.7)
    B. (-3.6, -2.1)
    C. (-2.9, 43.9)
    D. (-43,9, 2.0)

68. Planning is,

    A. Project management
    B. Concern about making decision relating to future
    C. first step in programme management
    D. Programme management

69. Find the missing one: FH : GI :: RT: ___

    A. QT
    B. SU
    C. QS
    D. SV

70. An ecological study is also referred to as

    A. A correlational study
    B. A cohort Study
    C. An environmental study
    D. A cross sectional study

71. A and B are ranked eighth and fourteenth from the top in a class of 58 students. What will be their respective ranks from the bottom of the class?

    A. 51,45
    B. 50,44
    C. 49,44
    D. 51,46

72. Why is an emic approach essential to understanding of illnesses?

    A. Because it provides a better understanding of the disease.
    B. Because it is close to the treating physician's perspective.
    C. Because it is closer to the patient's perspective
    D. Because it provides a holistic perspective

73. The process of taking informed consent for participating in research is a reflection of which of these principles?

    A. Autonomy
    B. Justice
    C. Beneficence
    D. Nonmaleficence

74. By increasing the sample size, the precision of confidence interval is

    A. Increased
    B. Decreased
    C. Unchanged
    D. Invalidated

75. The insurance component of Ayushman Bharat is called

    A. Pradhan Mantri Jan Arogya Yojana
    B. Pradhan Mantri Jan Aushadhi
    C. Pradhan Mantri Surakshit Matritva Abhiyan
    D. Pradhan Mantri Matritva Vandana Yojana

76. What is a premature death?

    A. A death <70 years of age
    B. A death below 56 years of age
    C. Any avoidable death
    D. Death among children

77. What is/are the important features of big data?

    A. high volume
    B. high velocity
    C. high variability
    D. All of the above

78. Roughly how many people are dying in a year in the world?

    A. 46 million
    B. 4.6 million
    C. 108 million
    D. 25 million

79. The lowest numerically possible value of negative predictive value is

    A. Minus Infinity
    B. Minus one
    C. Zero
    D. One

80. Which one of these diseases cause the highest number of deaths?

    A. HIV/AIDS
    B. Malaria
    C. Tuberculosis
    D. Ebola

81. Validity can be defined as _____

    A. The degree to which results are consistent on repeated measurements
    B. A measure of the strength of association between two variables
    C. The degree to which an instrument measures what it is supposed to measure.
    D. The degree to which two variables are linearly related

82. Which of the following is a measure of dispersion?

    A. First quartile
    B. Third quartile
    C. Interquartile range
    D. 95% confidence interval

83. Which of the following statements about the case control design is FALSE?

    A. Design to test hypothesis
    B. Subjects are grouped based on exposure
    C. Analysis is by odds ratio
    D. Low cost and time commitment

84. Select one disease that was eradicated

    A. Poliomyelitis
    B. Plague
    C. Chickenpox
    D. Rinderpest

85. Which of the following Pearson's correlation coefficients indicate strong assocaition between 2 variables?

    A. 0.211
    B. -0.921
    C. -0.219
    D. 0.001

86. From a sample data of a few observations, mean and SD are reported as 25±15. Which of the following cannot be an estimate for standard error of mean from this data?

    A. 7.5
    B. 3
    C. 17.5
    D. 0.15

87. Epidemiological measures of effect assess the _____ between an exposure and an outcome

    A. Confounding factor
    B. Strength of association
    C. Causal relationship
    D. Strength of reversibility

88. If the risk of developing a disease is 90%, how much is the odds of developing the disease?

    A. 0.90
    B. 0.10
    C. 9.00
    D. 1.11

89. For count data, which of the following probability distribution is most appropriate?

    A. Negative binomial
    B. Binomial
    C. Gamma
    D. Poisson

90. In India pre-natal sex determination of an unborn child is legally

    A. Allowed if the woman has two living girl children
    B. Allowed when the woman is expecting twin children
    C. Allowed when foetal abnormalities and genetic defects are suspected
    D. Not allowed at all

91. Which one the following is not a method of data collection in qualitative research?

    A. FGDs
    B. In-depth interviews
    C. Participant observation
    D. Questionnaire

92. Next two numbers in the series will be 17, 32, 19, 29, 21, 26, 23, ___, ___

    A. 25,25
    B. 24,23
    C. 23,29
    D. 23,25

93. An orderly set of data arranged in accordance with their time of occurrence is called: _____

    A. Arithmetic series
    B. Harmonic series
    C. Geometric series
    D. Time series

94. In which type of measurement scales, the value of Zero is absolute and not arbitrary?

    A. Nominal
    B. Ordinal
    C. Interval
    D. Ratio

95. To determine variation in antler length of deer from six national parks which would be the best statistical test?

    A. F test
    B. Student's t-test
    C. Regression analysis
    D. Chi square test

96. Population norm for a sub-centre in a hilly/ tribal/ difficult area is

    A. 1000
    B. 3000
    C. 5000
    D. 10000

97. Select one waterborne disease from the list given below.

    A. Hepatitis E
    B. Influenza
    C. Nipaah
    D. Tetanus

98. Who among the following is considered a pioneer of the randomized controlled trial design?

    A. Austin Bradford Hill
    B. Elandt-Johnson
    C. John Snow
    D. John Graunt

99. Which statistical test can be used to compare the survival distributions of two samples?

    A. Chi-squared test
    B. Mann-Whitney U test
    C. Log rank test
    D. F test

100. Any systematic error in the design, conduct, or analysis of a study that results in a mistaken estimate of an exposure's effect on the risk of disease is called:

    A. Confounding
    B. Bias
    C. Interaction
    D. Stratification