Entrance Examination for Admission to the P.G. Courses in the Teaching Departments, 2024

CSS

DEMOGRAPHY AND BIOSTATISTICS

General Instructions

1. The Question Paper is having 100 Objective Questions, each carrying one mark.

2. The answers are to be (✓) 'tick marked' **only** in the "**Response Sheet**" provided.

3. **Negative marking** : **0.25 marks** will be deducted for each wrong answer .

Time : 2 Hours   **Max. Marks : 100**

To be filled in by the Candidate										
Register Number	in Figures									
	in words									

Choose appropriate answer from the options in the questions.

(100 × 1 = 100 marks)

1. When a research problem is related to heterogeneous population, the most suitable sampling method is?

    A. Cluster Sampling

    B. Stratified Sampling

    C. Convenient Sampling

    D. Lottery Method

_____

2. Which one among the following statement is true in the context of the testing of hypotheses?
   A. It is only the alternative hypotheses that can be tested
   B. It is only the null hypotheses that can be tested
   C. Both the alternative and the null hypotheses can be tested
   D. Both the alternative and the null hypotheses cannot be tested

3. What are the conditions in which Type-I error occurs?
   A. The null hypotheses get accepted even if it is false
   B. The null hypotheses get rejected even if it is true
   C. Both the null hypotheses as well as alternative hypotheses are rejected
   D. None of the above

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4. How is random sampling helpful?

   A. Reasonably accurate

   B. An economical method of data collection

   C. Free from personal biases

   D. All of the above

5. What does the longitudinal research approach actually deal with?

   A. Long-term research   B. Short-term research

   C. Horizontal research   D. None of the above

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

   A. Snowball   B. Random

   C. Cluster   D. Stratified

7. Which technique is generally followed when the population is finite?

   A. Systematic sampling technique   B. Purposive sampling technique

   C. Area sampling technique   D. None of the above

8. A statistical measure based upon the entire population is called parameter, while measure based upon a sample is known as

   A. Inference   B. Statistics

   C. Sample parameter   D. None of these

9. How can the objectivity of the research be enhanced?

   A. Though its validity   B. Through its reliability

   C. Through its impartiality   D. All of these

10. Normal probability curve should be

    A. Zero skewed

    B. Positively skewed

    C. Negatively skewed

    D. Leptokurtic skewed

11. Which of the following statement is correct?

    A. Reliability ensures the validity

    B. Validity ensures reliability

    C. Reliability and validity are independent of each other

    D. Reliability does not depend on objectivity

12. Reliability of a test does not imply

    A. Reproducibility

    B. Validity

    C. Consistency

    D. Repeatability

13. The function $f(x) = ax^2 + bx + c$ has a ———————— when $a > 0$.

    A. maximum

    B. minimum

    C. positive slope

    D. negative slope

14. If $|x| = -2$, then

    A. $x = 2$

    B. $x = -2$ and $x = +2$

    C. $x = -2$

    D. there is no solution for x

15. $\log_a(x/y) = $ ———————— ?

    A. $\log_a x / \log_a y$

    B. $\log_a x / y$

    C. $\log_a x + \log_a y$

    D. $\log_a x - \log_a y$

16. What is the major attribute of Correlation Analysis?

    A.   Association among variables   B.   Difference among variables

    C.   Regression among variables   D.   Variations among variables

17. The relationship between two variables is determined by

    A.   Regression   B.   Mean

    C.   Correlation   D.   Dispersion

18. Coefficient of correlation measures

    A.   Direction of the relation   B.   Degree of the relation

    C.   Both (A) and (B)   D.   None

19. Partial Correlation is a type of

    A.   Simple correlation   B.   Multiple correlation

    C.   Both (A) and (B)   D.   None

20. If the coefficient of correlation is positive, the curve representing the relationship
    will be

    A.   Upward slopping   B.   Downward slopping

    C.   Vertical   D.   Horizontal

21. Relationship of two or more variables is examined excluding some other
    variables in case of

    A.   Total correlation   B.   Partial correlation

    C.   Multiple correlation   D.   None

22. Graph of variables having linear relationship will be
    A. Curved
    B. Hyperbola
    C. Straight Line
    D. None

23. As the value of *x* increases, if *y* also increases, then the coefficient of correlation will be
    A. Positive
    B. Negative
    C. Zero
    D. None

24. In a frequently distribution, the mean and median are 21 and 22 respectively, then its mode is approximately
    A. 22.0
    B. 20.5
    C. 25.5
    D. 24.0

25. Karl Pearson's coefficient of correlation is based on the assumption by
    A. Normality
    B. Platykurtic
    C. Leptokurtic
    D. None of the above

26. The chi-square test cannot be applied if
    A. any expected cell frequency is less than one
    B. sample size is more than 100
    C. three groups are to be compared
    D. association between two factors are to be examined

27. In case of simple correlation, the number of variables involved are
    A. 1
    B. 2
    C. 3
    D. 4

28. Transpose of a column matrix is

    A. Zero matrix
    B. Column matrix
    C. Diagonal matrix
    D. Row matrix

29. If $\log_{10}(7) = a$, then $\log_{10}(1/70)$ is equal to

    A. $-(1+a)$
    B. $(1+a)^{-1}$
    C. $a/10$
    D. $1/10a$

30. The graph of $f(x) = mx + b$ is decreasing if ——————.

    A. $m < 0$
    B. $m > 0$
    C. $b < 0$
    D. $b > 0$

31. Which of the following is possible for rational functions?

    A. more than one vertical asymptote
    B. more than one horizontal asymptote
    C. both horizontal and oblique asymptote
    D. no asymptotes

32. The solution to a system of equations is consistent when

    A. the solution produces 0 = 0
    B. the lines intersect at one point
    C. the system is dependent
    D. all of the above

33. If $\log_2 x = 6$, then $x =$ ——————.

    A. 3
    B. 12
    C. 36
    D. 64

34. $f(x) = e^x$ is a

    A.   trigonometric function   B.   logarithmic function

    C.   exponential function   D.   algebraic function

35. For the linear equation $3x + 4y = 12$, the 'x' intercept is

    A. $(4, 0)$ B. $(0, 3)$

    C. $(-4, 0)$ D. $(0, -3)$

36. $\log_a 10$ is equivalent to —————.

    A.   2   B. $\log 10/5$

    C. $\log 2$ D. $\log 10/\log 5$

37. $\log_a X^3 = $ —————?

    A. $(\log_a x)(\log_a 3)$ B. $(\log_a x) - (\log_a 3)$

    C. $(\log_a x) + (\log_a 3)$ D. $3(\log_a x)$

38. If $f(x) = x^2$ then $f(x + h) = $ —————.

    A. $x^2 + h^2$ B. $x^2 + h$

    C. $x^3 + x^2 h$ D. $x^2 + 2xh + h^2$

39. Two non-vertical lines are perpendicular if

    A.   the product of their slopes is –1   B.   their slopes are reciprocals

    C.   the sum of their slopes is –1   D.   they have different y-intercepts

40. If a system of two equations has only one solution, then the lines representing the equation

    A.   are parallel   B.   meet at origin

    C.   intersect once   D.   coincide

41. The Total Size of the Population in Kerala, according to 2011 Census, was

    A.   3, 34, 06, 061   B.   4, 34, 06, 061

    C.   2, 34, 06, 061   D.   5, 34, 06, 061

42. Graph of variables having non-linear relationship will be

    A.   Curved   B.   Hyperbola

    C.   Straight line   D.   None of the above

43. Every even integer is also

    A.   Natural number   B.   Whole number

    C.   Irrational number   D.   Rational number

44. The graph of a quadratic function is

    A.   a line   B.   a circle

    C.   a parabola   D.   constant

45. If a polynomial $f(x)$ is divided by $x - k$, then the remainder equals to

    A. k B. $f(x - k)$

    C. $f(x)$ D. $f(-k)$

46. If $\sqrt{a} = 4$, then $a = ?$

    A. ± 2 B.   2

    C.   16   D.   not real

47. Which of the following is an even function?

    A. $f(x) = \sqrt{x}$ B. $f(x) = 1/x$

    C. $f(x) = |x|$ D. $f(x) = (x-2)^2$

48. The degree of the polynomial $f(x) = -2(x+1)^2(x-3)(x-2)^3$ is

    A.   4   B.   5

    C.   6   D.   7

49. In $e^{x+1} = \underline{\hspace{2cm}}?$

    A. $x + 1$ B.   1

    C. -1 D. x

50. The missing value from the series 2, 8, 3, 27, 4, ─────, 5, 125 is

    A.   87   B.   78

    C.   64   D.   81

51. Population Registers have been mostly used in developed countries for obtaining

    A.   Birth records   B.   Death records

    C.   Migration records   D.   Distribution of population

52. In which year, the Government of India launched the Reproductive and Child Health (RCH) Programme in India?

A. 1994
B. 1995
C. 1996
D. 1993

53. The Government of India launched the National Rural Health Mission (NRHM) in the year

A. 2004
B. 2005
C. 2006
D. 2007

54. —————— kind of formula is used in the Exponential Growth Model of population growth.

A. $P(t) = P(0)\{1 + e^{rt}\}$
B. $P(t) = P(0)\{1 + r\}e^{t}$

C. $P(t) = \dfrac{P(0)}{1 + e^{rt}}$
D. $P(t) = P(0)\, e^{rt}$

55. Who is the author of the book "Population of India and Pakistan"?

A. G.B. Saxena
B. Tim Dyson
C. K.C. Zachariah
D. Kingsely Davis

56. During —————— period, India's population marked negative growth rate.

A. 1901-11
B. 1911-21
C. 1991-2001
D. 1921-31

57. As per Indian Census records, the highest percentage decadal variation of population, in India, recorded during the —————— period.

A. 1921-31
B. 1961-71
C. 1971-81
D. 1981-91

58. Which Government Ministry is conducting Census Operations in India?

    A.   Health and Family Welfare   B.   Human Resource Development

    C.   Local Self Government   D.   Home Affairs

59. Infant Mortality Rate (IMR) refers to

    A.   no. of infant deaths/1000 population

    B.   no. of infant deaths/1000 live births

    C.   no. of infant deaths/1000 infants

    D.   no. of infant deaths/1000 children

60. The Net Reproduction Rate (NRR) = 1 implies exact replacement, then what if NRR < 1 implies

    A.   not replacing itself and a positive growth rate in short run

    B.   not replacing itself and a negative growth rate in short run

    C.   not replacing itself and a positive growth rate in long run

    D.   not replacing itself and a negative growth rate in long run

61. Which one stated below is not a migration model?

    A.   Shep's model   B.   Todaro's model

    C.   Cost-Benefit model   D.   Stouffer's model

62. Total Fertility Rate (TFR) refers to

    A.   no. of children/woman   B.   no. of children/family

    C.   no. of children/1000 population   D.   no. of births/woman

63. General Fertility Rate (GFR) refers to

    A.   no. of births per 1000 general population

    B.   no. of births per 1000 female population

    C.   no. of births per 1000 female population aged 15-49

    D.   no. of births per 1000 male population aged 15-54

64. What would be the relationship between Total Fertility Rate (TFR), Gross Reproduction Rate (GRR) and Sex Ratio at Birth (SRB) in a stable population?

A. $TFR = \dfrac{GRR}{1+SRB}$

B. $TFR = SRB(1+GRR)$

C. $TFR = GRR(1+SRB)$

D. $TRF = \dfrac{SRB}{1+GRR}$

65. Kerala State formed, as part of State's reorganisation in India, on

A. 1955

B. 1956

C. 1957

D. 1958

66. "Sustainable Development" refers to

A. Economic Development Only

B. Social Development Only

C. Overall Development

D. Industrialisation

67. Morbidity deals with

A. Fertility

B. Mortality

C. Diseases

D. None

68. The General Assembly of the United Nations designated —————— as the World Population Year (WPY)

A. 1954

B. 1964

C. 1974

D. 1984

69. The headquarters of World Health Organization is located at

A. New York

B. Geneva

C. New Delhi

D. Washington

70. The legal age at marriage for males in India is

    A. 18 years   B. 21 years

    C. 19 years   D. 20 years

71. ─────────── is considered as an indicator of overall health condition of a society.

    A. IMR   B. GDP

    C. TFR   D. NRR

72. Ageing index is the ratio of the number of persons of age 65 years and over to

    A. the number of population

    B. the number of working age population

    C. the number of children under 15 years of age

    D. the number of children under 6 years of age

73. The International Conference on Population and Development held in Cairo during

    A. 1993   B. 1994

    C. 1995   D. 1996

74. The United Nation's observes World Population Day on

    A. June 11   B. July 11

    C. May 11   D. April 11

75. The primary unit of enumeration in Census operation is

    A. Household   B. Individual

    C. Village   D. Family

76. In India, the Census operation is taking place in every ten years. The uninterrupted Census operations started in India since

    A.   1941   B.   1951

    C.   1871   D.   1881

77. The best way of defining Gender Equity has been with regard to the

    A.   Equality in Physical Strength   B.   Equality in Emotional Strength

    C.   Equality of Opportunities   D.   Reservation to Women

78. The new National Health Policy of India, launched in the year

    A.   2000   B.   2001

    C.   2002   D.   2003

79. Which one of the following is matched correctly?

    A.   Reproductive and Child Health (RCH) : 1995

    B.   The new National Population Policy of India : 2005

    C.   National Rural Health Mission : 2000

    D.   National Family Health Survey-III : 2007-2008

80. Which of the following is correctly matched?

    A.   1947-Births and Deaths Registration Act

    B.   1948-Census Act of India

    C.   1961-Sample Registration System in India

    D.   1960-Vital Registration System

81. Which one of the following is not matched correctly?

    A.   Parent Support Ratio: persons aged 85/50-64

    B.   Potential Support Ratio: persons aged 15 to 64/65

    C.   Ageing index is the ratio: elderly/children

    D.   Total dependency ratio: children and elderly/total population

82. Which one of the following is not matched correctly?

 A. Crude Birth Rate: total births/total population

 B. General Fertility Rate: total births/total women in the reproductive age

 C. Total Fertility Rate: number of children/woman

 D. Gross Reproduction Rate: total female children/total population

83. Which one of the following is matched correctly?

 A. Principles of Demography: SD Misra

 B. Population of India and Pakistan: Kingsely Davis

 C. Economic Backwardness and Economic Growth: Easterlin

 D. Principles of Population Studies: D J Bogue

84. Which one of the following is not matched correctly?

 A. Fertility-Births   B. Mortality-Deaths

 C. Nuptiality- Migration   D. Morbidity-Diseases

85. Which one of the following is not matched correctly?

 A. Average annual exponential growth rate in India during 2001-2011 : 1.64%

 B. Proportion of population in India to 0-14 ages, as per 2011 Census : 29.1%

 C. Population Density in India, as per 2011 Census : 382

 D. Sex Ratio in India, as per 2011 Census : 1040

86. Assertion (A): Replacement level of fertility is not achieved in India.

 Reason (R):   Literacy levels of females in India are still higher than that of males.

 A. Both (A) and (R) are true, and (R) is the correct explanation of (A)

 B. Both (A) and (R) are true, but (R) is not correct explanation of (A)

 C. (A) is true but (R) is false

 D. (A) is false but (R) is true

87. Assertion (A): NRR=1 means population at stationary stage.

Reason (R): NRR=1 means that a woman gives birth to one daughter on an average.

A. Both (A) and (R) are true, and (R) is the correct explanation of (A)

B. Both (A) and (R) are true, but (R) is not correct explanation of (A)

C. (A) is true but (R) is false

D. (A) is false but (R) is true

88. Assertion (A): Level of fertility is relatively lower in the Southern states as compared with Northern states of India.

Reason (R): Literacy rate of females is lower in the northern states as compared to the Southern states of India.

A. Both (A) and (R) are true, and (R) is the correct explanation of (A)

B. Both (A) and (R) are true, but (R) is not correct explanation of (A)

C. (A) is true but (R) is false

D. (A) is false but (R) is true

89. Assertion (A): Degenerative diseases are emerging as the major cause of death in urban India.

Reason (R): Life style changes are largely responsible for degenerative diseases.

A. Both (A) and (R) are true, and (R) is the correct explanation of (A)

B. Both (A) and (R) are true, but (R) is not correct explanation of (A)

C. (A) is true but (R) is false

D. (A) is false but (R) is true

90. Assertion (A): Even after achieving the replacement level of fertility, population continues to grow.

Reason (R): This happens basically due to inbuilt population momentum.

A. Both (A) and (R) are true, and (R) is the correct explanation of (A)

B. Both (A) and (R) are true, but (R) is not correct explanation of (A)

C. (A) is true but (R) is false

D. (A) is false but (R) is true

91. Who is the executive head of population census organisation in India?

A. Registrar General and Census Commissioner

B. Director of Census Operations

C. Secretary to Ministry of Home Affairs, Govt. of India

D. Joint-Secretary to Ministry of Home Affairs, Govt. of India

92. Sample Registration System (SRS) publishing estimates on vital rates, in Kerala since

A. 1970   B. 1971

C. 1972   D. 1973

93. Among which source of population data in India given below, the technique of dual record system has been used for data collection.

A. Population Census

B. Vital Registration System

C. Sample Registration System

D. National Sample Survey

94. The subject matter of Nuptiality refers to

    A.   The entire process of marriages and their dissolutions

    B.   The entire process of births and marriages

    C.   The entire process of deaths and marriages

    D.   The entire process of births, deaths and marriages

95. Which of the following was not among the goals set by National Population Policy of India 2000?

    A.   Reduce Infant Mortality Rate (IMR) to below 30 per 1000 live births by 2010

    B.   Reduce Maternal Mortality Ratio (MMR) to below 100 per 100.000 live births by 2010

    C.   Reduce Crude Birth Rate (CBR) to below 15 live births per 1000 population by 2010

    D.   Prevent and Control Communicable diseases by 2010

96. Epidemiology is defined as the

    A.   "study of the distributions and determinants of disease related states or events in specified populations, and the application of this study to the control of disease"

    B.   "study of the distributions and determinants of communicable disease related states or events in specified populations, and the application of this study to the control of communicable disease"

    C.   "study of the distributions and determinants of non-communicable disease related states or events in specified populations, and the application of this study to the control of non-communicable disease"

    D.   "study of the distributions and determinants of health-related states or events in specified populations and the application of this study to the control of health problems"

97. The demographic dividend is the economic growth potential that can result from

A. Shift's in a population's age structure, mainly when the share of the working-age population (ages from 15 to 64) is larger than the share of child population (ages 14 and younger)

B. Shift's in a population's age structure, mainly when the share of the working-age population (ages 15 to 64) is larger than the share old age population (ages 65 and older)

C. Shift's in a population's age structure, mainly when the share of the working-age population (ages from 15 to 64) is larger than the share of non-working-age population (ages 14 and younger and ages *65* and older together)

D. Shift's in a population's age structure, mainly when the share of the working-age population (ages *15* to 64) become more or less same as that of the non-working-age share of the population (ages 14 and younger and ages *65* and older)

98. Which among the following was not part of Sustainable Development Goals (SDG) set in 2015 by the United Nations General Assembly?

A. Reduced Population Growth Rate

B. Reduced Inequality

C. Good Health and Well-being

D. Industry, Innovation and Infrastructure

99. According to the Sustainable Development Agenda of United Nations in 2015, to achieve sustainable development, it is crucial to harmonize the following three core elements

A. Economic growth, public health and environmental protection

B. Economic growth, demographic change and environmental protection

C. Economic growth, political stability and environmental protection

D. Economic growth, social inclusion and environmental protection

100. Which among the non-communicable disease control programme in India with its launching year is not correctly matched?

A. NPCDCS – 2010   B. NPCBVI – 1986

C. NMHP – 1982   D. NPHCE – 2010

ANSWER SHEET

1	A	B	C	D	E	26	A	B	C	D	E	51	A	B	C	D	E	76	A B C D E
2	A	B	C	D	E	27	A	B	C	D	E	52	A	B	C	D	E	77	A B C D E
3	A	B	C	D	E	28	A	B	C	D	E	53	A	B	C	D	E	78	A B C D E
4	A	B	C	D	E	29	A	B	C	D	E	54	A	B	C	D	E	79	A B C D E
5	A	B	C	D	E	30	A	B	C	D	E	55	A	B	C	D	E	80	A B C D E
6	A	B	C	D	E	31	A	B	C	D	E	56	A	B	C	D	E	81	A B C D E
7	A	B	C	D	E	32	A	B	C	D	E	57	A	B	C	D	E	82	A B C D E
8	A	B	C	D	E	33	A	B	C	D	E	58	A	B	C	D	E	83	A B C D E
9	A	B	C	D	E	34	A	B	C	D	E	59	A	B	C	D	E	84	A B C D E
10	A	B	C	D	E	35	A	B	C	D	E	60	A	B	C	D	E	85	A B C D E
11	A	B	C	D	E	36	A	B	C	D	E	61	A	B	C	D	E	86	A B C D E
12	A	B	C	D	E	37	A	B	C	D	E	62	A	B	C	D	E	87	A B C D E
13	A	B	C	D	E	38	A	B	C	D	E	63	A	B	C	D	E	88	A B C D E
14	A	B	C	D	E	39	A	B	C	D	E	64	A	B	C	D	E	89	A B C D E
15	A	B	C	D	E	40	A	B	C	D	E	65	A	B	C	D	E	90	A B C D E
16	A	B	C	D	E	41	A	B	C	D	E	66	A	B	C	D	E	91	A B C D E
17	A	B	C	D	E	42	A	B	C	D	E	67	A	B	C	D	E	92	A B C D E
18	A	B	C	D	E	43	A	B	C	D	E	68	A	B	C	D	E	93	A B C D E
19	A	B	C	D	E	44	A	B	C	D	E	69	A	B	C	D	E	94	A B C D E
20	A	B	C	D	E	45	A	B	C	D	E	70	A	B	C	D	E	95	A B C D E
21	A	B	C	D	E	46	A	B	C	D	E	71	A	B	C	D	E	96	A B C D E
22	A	B	C	D	E	47	A	B	C	D	E	72	A	B	C	D	E	97	A B C D E
23	A	B	C	D	E	48	A	B	C	D	E	73	A	B	C	D	E	98	A B C D E
24	A	B	C	D	E	49	A	B	C	D	E	74	A	B	C	D	E	99	A B C D E
25	A	B	C	D	E	50	A	B	C	D	E	75	A	B	C	D	E	100	A B C D E

ROUGH WORK

ROUGH WORK

ROUGH WORK