MAHARAJA RANJIT SINGH PUNJAB TECHNICAL UNIVERSITY BATHINDA (Pb) - 151001

(State Univ. Estb by Punjab Govt. Act No. 5 (2015) and Approved u/s 2(f) & 12(B) of the UGC Act of 1956)

RESEARCH METHODOLOGY/LOGICAL/ANALYTICAL/LANGUAGE APTITUDE

(Common to All Disciplines)

Ph.D. ENTRANCE TEST (PET-2023)

Roll No. ...., Date: .... Signature of the Candidate: ....

Answer Key:

Q. 1: (D)	Q. 11: (D)	Q. 21: (C)	Q. 31: (B)
Q. 2: (B)	Q. 12: (B)	Q. 22: (D)	Q. 32: (B)
Q. 3: (A)	Q. 13: (D)	Q. 23: (D)	Q. 33: (C)
Q. 4: (A)	Q. 14: (A)	Q. 24: (C)	Q. 34: (B)
Q. 5: (A)	Q. 15: (A)	Q. 25: (A)	Q. 35: (C)
Q. 6: (C)	Q. 16: (C)	Q. 26: (C)	Q. 36: (B)
Q. 7: (D)	Q. 17: (B)	Q. 27: (C)	Q. 37: (D)
Q. 8: (A)	Q. 18: (C)	Q. 28: (A)	Q. 38: (C)
Q. 9: (D)	Q. 19: (A)	Q. 29: (D)	Q. 39: (D)
Q. 10: (C)	Q. 20: (C)	Q. 30: (A)	Q. 40: (D)

19/1/24

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M.M. = 50 [each question is of 1.25 marks]

Q 1. Which of the following is not a source of data?
(A) Administrative records
(B) Population census
(C) GIS
(D) Sample survey

Q 2. The histogram shows the number of minutes needed by 45 students to finish playing a computer game. Which of the following statements is correct?
(A) The distribution is skewed to the right.
(B) The distribution is skewed to the left.
(C) The distribution appears to be normal.
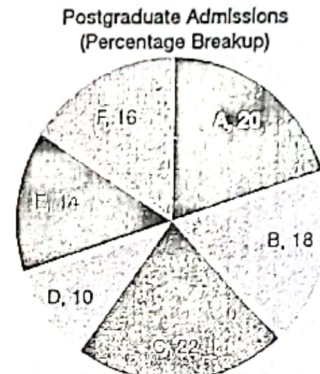(D) The distribution appears to be chi-square.
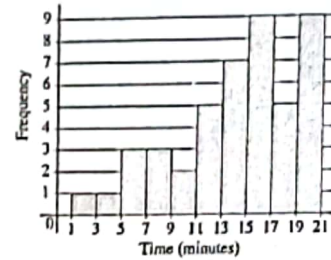
Directions for Q 3 to Q 7: Study the following pie charts carefully, consisting of data of admission in graduate and postgraduate courses in different institutions. And answer the questions from Q 3 to Q 7.

Graduate Admissions (Percentage Breakup)
Postgraduate Admissions (Percentage Breakup)

Total Admissions = 30,000
Total Admissions = 20,000

Q 3. What are the total admissions in College B for both graduate and postgraduate courses?
(A) 9,600
(B) 9,800
(C) 10,200
(D) 10,500

Q 4. What is the difference in graduate and postgraduate courses in College A?
(A) 1,400
(B) 1,600
(C) 1,800
(D) 2,000

Q 5. By what per cent are admissions in graduate courses higher than postgraduate courses in case of College F?
(A) 31.25
(B) 25.50
(C) 33.33
(D) 35.50

Q 6. What is the difference between the highest admissions in graduate and the highest admissions in postgraduate courses in any combination of the colleges?
(A) 1,200
(B) 1,500
(C) 1,600
(D) 2,000

Q 7. By what per cent are postgraduate admissions lower than graduate admissions in case of College D?
(A) 45
(B) 55
(C) 70
(D) 80

Q 8. .... can help in decreasing the sampling error.
(A) Increase in sample size
(B) Decrease in sample size
(C) Process of analysis
(D) Process of randomization

Q 9. Which of the following correlational values is the strongest?
(A) +0.10
(B) -0.95
(C) +0.90
(D) -1.00

Q 10. Which of the following statements are mutually inconsistent?
  I. Mostly poets are not egoistic.
  II. Mostly poets are humble.
  III. Some poets are egoistic.
  IV. Some poets are not non-egoistic.
  (A) I and IV   (B) II and III
  (C) I and III   (D) III and IV

Q 11. Which of the following statements are mutually contradictory?
  I. All flowers are not fragrant.
  II. Most flowers are not fragrant.
  III. None of the flowers are fragrant.
  IV. Most flowers are fragrant.
  (A) I and II   (B) I and III
  (C) II and III   (D) III and IV

Q 12. 'No men are mortal' is contradictory to:
  (A) Some men are mortal.   (B) Some men are not mortal.
  (C) All men are mortal.   (D) No mortal is man.

Q 13. The two main approaches of a research are:
  (A) data collection and data analysis   (B) surveys and questionnaires
  (C) sampling and data collection   (D) qualitative and quantitative

Q 14. Which scale is the simplest form of measurement?
  (A) Nominal   (B) Ordinal
  (C) Interval   (D) Ratio

Q 15. What do you consider as the main aim of interdisciplinary research?
  (A) To bring out holistic approach to research.
  (B) To reduce the emphasis of single subject in research domain.
  (C) To oversimplify the problem of research.
  (D) To create a new trend in research methodology.

Q 16. Which method is most directly associated with lack of informed consent?
  (A) In-depth interviewing   (B) Content analysis
  (C) Covert observation   (D) Case study

Q 17. Research is not considered ethical if it:
  (A) Tries to prove a particular point.
  (B) Does not ensure privacy and anonymity of the respondent.
  (C) Does not investigate the data scientifically.
  (D) Is not of a very high standard.

Q 18. What is a cross-sectional design?
  (A) A study of one specific segment of customers.
  (B) The research design that is free from any personal bias.
  (C) The collection of data from more than respondent in the same time period.
  (D) A comparison of two or more variables over a long period of time.

Q 19. A correlation coefficient is best characterized as:
  (A) A measure of the extent of the relationship between two variables.
  (B) An index of the causal direction between an independent and dependent variable.
  (C) An indication of the likelihood that an experimental finding will be replicated by others.
  (D) A measure of the likelihood that observed differences may be attributed to chance.

Q 20. Attributes of objects, events or things which can be measured are called:
  (A) Qualitative measure   (B) Data
  (C) Variables   (D) None of these

Q 21. To test null hypothesis, a researcher uses:
  (A) t- test   (B) ANOVA
  (C) χ^2 (Chi-square test)   (D) Factorial analysis

Q 22. Manipulation is always a part of:
  (A) historical research   (B) fundamental research
  (C) descriptive research   (D) experimental research

Q 23. A satisfactory statistical quantitative method should not possess which one of the following qualities?
  (A) Appropriateness   (B) Measurability
  (C) Comparability   (D) Flexibility

Q 24. Epistemology refers to:
(A) A term specifically used in the social sciences.
(B) A term used to study the types of diseases.
(C) Acceptable level of knowledge in a field of study.
(D) A type of interviewing technique.

Q 25. Research question is included in the .... part of the research paper. *(Choose the correct option to fill in the blank)*
(A) introduction
(B) conclusion
(C) first sentence of introduction
(D) last sentence of introduction

Q 26. 'A' is the father of 'C', and 'D' is the son of 'B\ 'E' is the brother of A'. If 'C' is the sister of 'D', then how is 'B' related to 'E'?
(A) Daughter
(B) Husband
(C) Sister-in-law
(D) Brother-in-law

Q 27. If south-east direction becomes north, north-east direction becomes west, and so on, then what will west become?
(A) North-west
(B) North-east
(C) South-east
(D) South-west

Q 28. A fraction is divided by reciprocal of itself. It is then multiplied by the original fraction. What is the fraction if the answer obtained is $11\frac{25}{64}$?
(A) 9/4
(B) 27/8
(C) 9/8
(D) 2/3

Q 29. Eiffel tower's $\frac{1}{5}$ th part is painted bronze, $\frac{1}{4}$ th of the remaining part is painted maroon. Rest of the Eiffel tower has golden colour. If the height of this golden coloured part is 450m, then height of Eiffel tower in metres is:
(A) 2250
(B) 1250
(C) 1000
(D) 750

Q 30. Sidhu travels one-fourth of total journey at 20 km/h, one-fourth at 10 km/h and rest of his journey at 80 km/h. Find the average speed in km/h of Sidhu for the whole distance?
(A) 22.85
(B) 25.15
(C) 50
(D) 40

Q 31. Venn diagram is a kind of diagram to:
(A) Represent and assess the truth of elementary inferences with the help of Boolean Algebra of classes.
(B) Represent and assess the validity of elementary inferences with the help of Boolean Algebra of classes.
(C) Represent but not assess the validity of elementary inferences with the help of Boolean Algebra of classes.
(D) Assess but not represent the validity of elementary inferences with the help of Boolean Algebra of classes.

Q 32. The correct mirror image for the given image is:

(A)   (B)   (C)   (D)
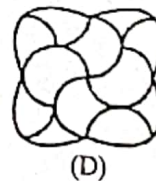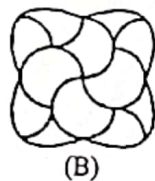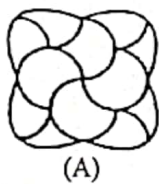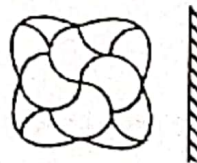
Q 33. A1M3b
(A) ∀ſW3P
(B) ∀ſW3P
(C) ∀JW3P
(D) ∀JW3b

Q 34. HV GT FR EP DN ?
(A) KL
(B) LM
(C) MN
(D) CL

The characters in given matrix follows a certain trend, row-wise or column-wise. Find out this trend and choose the missing character from the given options.

31	17	58	87
68	19	61	56
91	22	70	50
10	142	11	?

(A) 3

(B) 6

(C) 7

(D) 9

Q 36. Kailash remembers that his brother Deepak's birthday falls after 20th May but before 28th May. While Geeta remembers that Deepak's birthday falls before 22nd May but after 12th May. On what date Deepak's birthday falls?

(A) 20th May

(B) 21st May

(C) 22nd May

(D) Cannot be determined

Q 37. Sangeeta remembers that her father's birthday was certainly after eighth but before thirteenth of December. Her sister Natasha remembers that their father's birthday was definitely after ninth but before fourteenth of December. On which date of December was their father's birthday?

(A) 10th

(B) 11th

(C) 12th

(D) Data inadequate

Q 38. In a queue, A is eighteenth from the front while B is sixteenth from the back. If C is twenty-fifth from the front and is exactly in the middle of A and B, then how many persons are there in the queue?

(A) 45

(B) 46

(C) 47

(D) 48

Q 39. X U S P N K I ?

(A) J

(B) K

(C) M

(D) F

Q 40. How many unit cubes are there in the figure?

(A) 52

(B) 53

(C) 54

(D) 56