

Test Code: SCA/SCB (Short Answer type) 2013

### Junior Research Fellowship in Psychology

The candidates for Junior Research Fellowship in Psychology are required to take short answer type tests – Research methodology in the forenoon and Psychology in the afternoon session. Calculator is not allowed. The syllabus and the sample questions for both tests are given below.

Test Code: **SCA**

### Syllabus for Research Methodology

1. Introduction: Types of Research, criteria of good research, Exploring research problems, Defining research problems, Principles of Theory construction, Steps in research, Report writing for publishing, Ethical issues in Psychological research.
2. Research Design: Features of good research design, Randomized group, Randomized block, Latin Squares, Factorial design.
3. Methods in Psychological research: Cross sectional and longitudinal methods, Applied behaviour analysis, Experimental and Quasi-experimental methods, Case study, Survey research, Interview, Content analysis, Projective techniques, Ethnographic method, Discourse analysis..
4. Sampling: Kinds of samples, sample size determination, probability and non-probability sampling methods.
5. Psychological Assessment: Characteristics and classification of tests, Item writing, Item analysis, Methods of Reliability and Validity, Norms, Computer assisted testing.
6. Statistical analysis: Data visualization, Categorized and non-categorized graphs, Normal probability curve, non-parametric statistics, ANOVA, Correlation, Partial and multiple regression, Data reduction techniques - Factor analysis, Cluster analysis.

*Sample Questions for Research Methodology*

**Test Code: SCA**

Full marks = 100

Time = 2 hours

**(Question no. 1 is compulsory. Answer any 4 out of the rest)**

**20 x 5 = 100**

1. What is sampling? Under what circumstances would you recommend:
  - a) A probability sample?
  - b) A stratified sample?
  - c) A non-probability sample?
  - d) A cluster sample?
  
2. Suppose that a researcher collected following set of data on years of service (X) and organizational climate (Y) for a sample of 10 employees.

X	Y
1	10
2	8
3	7
4	6
5	6
6	5
7	5
8	4
9	3
9	2

- a) Draw a scatter plot of the data.
- b) Calculate the regression slope and Y-intercept.
- c) Draw the regression line on the scatter plot.

- d) Find the coefficient of determination and non-determination. What do they mean?
3. What is the difference between qualitative and quantitative data analysis? One Philanthropist noted gradual decrease in attendance of elders in the self-help group developed by him. Suppose you are asked to interview 51 elders for assessing their intention to attend the group. Out of 51, 25 people expressed favorable, 10 people expressed indifferent and 16 people expressed unfavorable attitude. Do these results indicate a significant trend of opinion? The critical value of relevant statistic at 5% level of significance is 7.82.
4. Four problems are given below. Study them carefully. Choose one problem and outline its research plans in both experimental and non-experimental scientific inquiries.
- How does leadership style affect group morale?
  - Does extrinsic reward undermine intrinsic motivation?
  - How does anxiety affect achievement in mathematics?
  - How does feedback help in reducing anxiety?
5. What is discourse analysis? How does it help in exploring research variables? Explore self-efficacy measurement dimensions out of the following speech of Maria Sharapova:

“I love the work that I put in on the court and I know that some day it will pay off,” Sharapova, runner-up in Melbourne 12 months ago, told reporters on Saturday.

“Saying that, I’m still 20 years old. I’ve said it many times; I don’t think this is the peak of my career. I believe that there are many more years to go, and I’m going to learn from all those experiences within those years. I’ve proven it before and I’ve done it before, so I don’t think you can ever count me out,” she said.

“No matter how confident or not, no matter where my ranking is, I’m one of the toughest competitors out there. I never leave the court without giving 100 per cent, and that’s why I think I gain a

lot of respect from my fans and from the tennis audience. It's what I love to do."

"I'm feeling really good," she said. "I had a really good off-season. Injury-free. I worked really hard. I put a lot of dedication into it. Waking up every single morning, I was looking forward to practice, getting better.

"My body will allow anything really. It's ready for anything," she said.

6. What is Ogive? Construct an Ogive for the following distribution of scores:

Scores	frequency
195-199	1
190-194	2
185-189	4
180-184	23
175-179	8
170-174	10
165-169	6
160-164	14
155-159	4
150-154	2
145-149	3
140-144	1

## **Test Code: SCB**

### **Syllabus for Psychology**

1. Cognitive processes: Human Information Processing, Theories of Attention, Principles of perception, Perceptual motor skills, Thinking and reasoning, Learning methods, Working memory, Human and Artificial Intelligence, Meta cognition, contemporary theories of emotion.
2. Neuropsychological and Geriatric assessment: History and Assumptions of neuro-psychology, Structure and functions of brain, Neuropsychological bases of cognitive process (Attention, language, memory) and executive functions (fluency, working memory, planning, response inhibition, & set shifting).
3. Developmental psychology: Piaget's cognitive development, Vygotsky's socio-cultural theory, Language development, Moral reasoning of young children, Personality and Social Development.
4. Rural Psychology: Theories of rural development and rural poverty, Rural diversification, sustainable rural livelihoods, Rural-Urban interactions. Attitude towards rural infrastructures, Farmers' suicide, Self-efficacy of farmers.
5. Industrial and Organizational psychology: Taxonomic approach of Job analysis, selection, methods of training, supervision and leadership, organizational climate, group morale, job satisfaction, structure of organization, organizational health and techniques of organizational development.
6. Educational psychology: School climate assessment, Teacher-pupil interaction, programmed learning, reading and writing motivation, school counseling.

**Test Code: SCB**

Full marks = 100

Time = 2 hours

**Attempt any two from Group-A and any three from Group-B**

20 x 5 = 100

**Group-A**

1. What is the difference between intelligence and creativity? Are computers the right kind of machine to be made intelligent?
2. What is Working memory? Discuss Baddeley's model of working memory.
3. What is perception? Perception is dynamic process involving both viewer and the viewed – elucidate.

**Group-B**

4. Draw a cerebrum and indicate cognitive functions of different lobes.
5. Socialization process depends on cognitive development of children – Explain.
6. What is self-efficacy? How do you improve self-efficacy of agricultural farmers for prevention of suicide?
7. Organizational climate depends on the styles of leadership – Discuss.
8. Is counseling important in school? State the difference between directive and non-directive counseling.