Part A

Total Marks – 32

(Compulsory 4 questions – 8 sub-question) (8 X 4)

1. Select the right answer from the alternatives :-
   
a) Basic idea of sampling is
   i) Selecting same elements in the population
   ii) Selecting heterogenous population
   iii) Collecting entire data bank

   b) Validity of sample depends on
   i) accuracy
   ii) population characteristics
   iii) wide variation between the elements

   c) Probability sampling is
   i) Judgement based
   ii) purposive
   iii) random
d) Standard error of the mean
   i) \( \frac{x}{\sqrt{n}} \)
   ii) \( \frac{x}{n} \)
   iii) \( \frac{\hat{o}}{\sqrt{n}} \)

e) Ordinary data include
   i) Indicator of order
   ii) Variation of the elements
   iii) Random data

f) Halo effect is
   i) known error
   ii) unidentified error
   iii) a pervasive error

g) OLAP is
   i) Online Auto Process
   ii) Other Line Analysis Process
   iii) Online Analytical Process

h) Simple Category Scale is also known as
   i) Likert Scale
   ii) Dichotomous Scale
   iii) Multiple Scale

2. Write True or False
   a) Equivalence is concerned about variances in one point of time
   b) Semantic differential Scale is summarized rating Scale
   c) Scalogram is unidimensional
   d) A portal is a gateway to web
   e) Reliability is not a sufficient condition for validity
   f) Cronbach’s coefficient alpha is not useful for multi-item scale
   g) Teritary sources example Internet Search engines
   h) Measures of Dispersion is Mode
   i) \( \backslash \)
3. Match the two columns :-

<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Semantic Differential Scale</td>
<td>a) Additive Model</td>
</tr>
<tr>
<td>b) Simple category Scale</td>
<td>b) $\bar{X} &gt; M$</td>
</tr>
<tr>
<td>c) Time Series Model</td>
<td>c) Range</td>
</tr>
<tr>
<td>d) Curve showing skewness</td>
<td>d) Also known as Dichotomous Scale</td>
</tr>
<tr>
<td>e) Thematic appreciation test</td>
<td>e) Lies in the concept of “Null”</td>
</tr>
<tr>
<td>f) Measures of dispersion</td>
<td>f) Used for brand image</td>
</tr>
<tr>
<td>g) Testing of hypothesis</td>
<td>g) Pictures</td>
</tr>
<tr>
<td>h) Important Scaling Technique</td>
<td>h) Rating Scale</td>
</tr>
</tbody>
</table>

4. Fill up the blanks :-
   a) Process is out of control if it falls beyond _________ and _________
   b) When data reported differ from actual data is called _________ error
   c) Reliability of data depends on ________________
   d) Most common rating scale is ________________
   e) Measures for ordinal data ________________
   f) Multivariate analysis of variance is ________________
   g) Univariate analysis of variance is ________________
   h) Bayesian statistics are extension of ________________ approach
Part – B

(Answer any three) \[16 \times 3 = 48\]

5. Distinguish between
   a) Direct & indirect question
   b) Open ended & closed question

6. Explain with example Likert Scale and Semantic differential scale

7. Write short notes (any two)
   a) Chi-Square Distribution \((X^2)\)
   b) ANOVA
   c) Co-efficient of Skewness
   d) Cross tabulation

8. Explain Exploratory Research Procedures and briefly narrate primary, secondary & tertiary sources

9. Find out Concordant & Discordant values

<table>
<thead>
<tr>
<th>Fitness</th>
<th>Count</th>
<th>Lower</th>
<th>Middle</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>14</td>
<td>4</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>Moderate</td>
<td>18</td>
<td>6</td>
<td>2</td>
<td>26</td>
</tr>
<tr>
<td>Low</td>
<td>2</td>
<td>6</td>
<td>16</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>34</td>
<td>16</td>
<td>20</td>
<td>70</td>
</tr>
</tbody>
</table>

Part C

To illustrate the application of the t-test to the one sample case, consider again the controller’s problem mentioned earlier with a sample of 100 accounts, she finds that the mean age of outstanding receivables is 52.5 days, with a standard deviation of 14.

Q: Do these results indicate the population mean might still be 50 days?

************