APPENDIX – A
LIST OF EXPERTS

1. Mrs. Inbaraj Jayshree  Lecturer
   Kapila Khandwala College of Education,
   Santacruz.

2. Dr. Iyer A. N.  Reader and Head
   Department of Education Management,
   S.N.D.T. Women’s University, Churchgate.

3. Dr. Joglekar S. V.  Retired, Professor and Head
   Department of Education,
   S.N.D.T. Women’s University, Churchgate.

4. Dr. Kaila H. L.  Reader and Incharge Head
   Department of Psychology,
   S.N.D.T. Women’s University, Churchgate.

5. Dr. Kesarkar M. K.  Lecturer
   Department of Psychology,
   S.N.D.T. Women’s University, Churchgate.

6. Dr. Modi Kalpana  Lecturer
   P.V.D.T. College of Education,
   S.N.D.T. Women’s University, Churchgate.

7. Dr. Naik V. V.  Reader
   Comprehensive College of Education,
   Chembur.

8. Dr. Patel M. N.  Teacher
   Brihan Mumbai Municipal Corporation School.

9. Dr. Shetty Geeta  Lecturer
   St. Xavier’s Institute of Education,
   Churchgate.

10. Dr. Tarkasbad U. T.  Lecturer
    P.V.D.T. College of Education,
    S.N.D.T. Women’s University, Churchgate.

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APPENDIX – B
CREATIVITY TEST (FORM A)

INSTRUCTIONS: Given below are some questions, read them carefully and answer them

I. Given below are some objects which we use in daily life.
What defects / faults do you find in them?
Objects -  1] Brick
            2] BEST Bus
Instructions: a] The time limit is 3 minutes.
b] When I say start, answer the question. Continue till I say stop.

<table>
<thead>
<tr>
<th>Brick</th>
<th>BEST Bus</th>
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II: Write down as many improvements or suggestions as possible for television.
Instructions: a] The time limit is 4 minutes.
b] When I say start, answer the question. Continue till I say stop.

<table>
<thead>
<tr>
<th>Improvement for television.</th>
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363
III: Suggest as many unusual uses as possible for the following objects.
          b] Comb.
Instructions: a] The time limit is 3 minutes.
          b] When I say start, answer the question. Continue till I say stop.

<table>
<thead>
<tr>
<th>Wall calendar</th>
<th>Comb</th>
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</table>

IV: What are the deep things in English? List them.
   For example: A deep well.
Instructions: a] The time limit is 2 minutes
          b] When I say start, answer the question. Continue till I say stop.

<table>
<thead>
<tr>
<th>A deep well</th>
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</tbody>
</table>

V: You are given a picture. What are the other products / things for which you can use this as an advertisement?
Instructions: a] The time limit is 3 minutes.
          b] look at the picture carefully.
          c] When I say start, answer the question. Continue till I say stop.
VI: Apart from electricity, what are the other things which can be used as fuel in running a train.
Instructions: a) The time limit is 3 minutes.
               b) When I say start, answer the question. Continue till I say stop.
VII: “If all the days of a week were Sundays”, what would happen? Write down your views.

Instructions: a] The time limit is 4 minutes.

b] When I say start, answer the question. Continue till I say stop.

VIII: Given below is the beginning of an incomplete story. You are required to complete the story on your own and give a title to it.

Instructions: a] The time limit is 6 minutes.

b] When I say start, answer the question. Continue till I say stop.

A young man was returning after the last show at the theatre, after midnight. On his way he saw a graveyard and was surprised to hear the sound of footsteps. He stopped to see what the matter was. As soon as he reached the graveyard, the sound stopped and he found that the gate was closed. But when he turned back the sound continued and the gate of the graveyard was open. And then.............

IX: Suppose if you get Aladdin’s lamp for a day, what would you do on that day?

Instructions: a] The time limit is 4 minutes.
b) When I say start, answer the question. Continue till I say stop.

<table>
<thead>
<tr>
<th>My activities and work.</th>
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X: You are given four sets of parallel lines. You are required to add lines or curves to each set to make them recognizable drawings / patterns. You have to write the names of what you have drawn.
Instructions: a) The time limit is 4 minutes.

    b) When I say start, answer the question. Continue till I say stop.

XI: The alphabet "D" has one big line and a curve. [ ] [ ].
The alphabet "M" has two big lines and two small lines. [ ] [ ] [ ] [ ]
Which other letters or figures can be drawn using these lines and curves?
Instructions: a) The time limit is 3 minutes.

    b) When I say start, answer the question. Continue till I say stop.

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<table>
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<tbody>
<tr>
<td>D</td>
<td>M</td>
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</table>

367
XII: You are given three pins, make as many figures / patterns as you can using them. However, within a particular pattern the direction of any two pins should be the same.
Instructions: a) The time limit is 2 minutes.
   b) When I say start, draw the pattern. Continue till I say stop.

XIII: What is the difference between a 'car' and a 'pen'?
Instructions: a) The time limit is 3 minutes.
   b) When I say start, answer the question. Continue till I say stop.

<table>
<thead>
<tr>
<th>Car</th>
<th>Pen</th>
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APPENDIX – C

CREATIVITY TEST (FORM B)

INSTRUCTIONS: Given below are some questions, read them carefully and answer them.

I. Given below are some objects which we use in daily life.
   What defects / faults do you find in them?
   
   Objects - 1] Rain coat.  
                 2] Television

   Instructions: a] The time limit is 3 minutes.
                 b] When I say start, answer the question. Continue till I say stop.

<table>
<thead>
<tr>
<th>Rain Coat</th>
<th>Television</th>
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</table>

II: Write down as many improvements or suggestions as possible for the game of cricket.

Instructions: a] The time limit is 4 minutes.
               b] When I say start, answer the question. Continue till I say stop.
III: Suggest as many unusual uses as possible for the following objects.
   b] Mirror.
Instructions: a] The time limit is 2 minutes.
    b] When I say start, answer the question. Continue till I say stop.

<table>
<thead>
<tr>
<th>Wall calendar</th>
<th>Mirror</th>
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</table>

IV: What are the sharp things in English? List them.
   For example: A sharp weapon.
Instructions: a] The time limit is 2 minutes
    b] When I say start, answer the question. Continue till I say stop.

<table>
<thead>
<tr>
<th>A sharp weapon.</th>
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</tbody>
</table>
V: You are given a picture. What are the other products / things for which you can use this as an advertisement?
Instructions: a] The time limit is 3 minutes.
   b] look at the picture carefully.
   c] When I say start, answer the question. Continue till I say stop.

VI: Apart from petrol or diesel, what are the other things which can be used as fuel in driving a rickshaw / car / truck.
Instructions: a] The time limit is 3 minutes.
   b] When I say start, answer the question. Continue till I say stop.
VII: "If Animals could speak", What would happen? Write down your views.
Instructions: a] The time limit is 4 minutes.
           b] When I say start, answer the question. Continue till I say stop.

"If Animals could speak", What would happen?

VIII: Given below is the beginning of an incomplete story. You are required to complete the story on your own and give a title to it.
Instructions: a] The time limit is 6 minutes.
           b] When I say start, answer the question. Continue till I say stop.

A young man was returning from a party, at midnight. On his way he saw a temple and was surprised to hear the sound of a bell. He stopped to see what the matter was. As soon as he reached the temple, the sound stopped and he found that the temple was closed. But when he turned his back the sound of the bell started again and the door of the temple was open. And then.............
IX: Suppose if you become invisible for a day, what would you do on that day?
Instructions: a] The time limit is 4 minutes.

b] When I say start, answer the question. Continue till I say stop.

<table>
<thead>
<tr>
<th>My activities and work.</th>
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X: You are given four sets of two circles each. You are required to add lines or curves to each set to make them recognizable drawings / patterns. You have to write the names of what you have drawn.
Instructions: a] The time limit is 4 minutes.

b] When I say start, answer the question. Continue till I say stop.

![Four sets of two circles with lines and curves]

XI: The alphabet "B" has one big line and two curves. [|| ⊗ ⊗].
The alphabet "K" has one big line and two small lines. [||  ||]
Which other letters or figures can be drawn using these lines and curves?
Instructions: a] The time limit is 3 minutes.

b] When I say start, answer the question. Continue till I say stop.
Xii: You are given three arrows, make as many figures / patterns as you can using them. However, within a particular pattern the direction of any two arrows should be the same.

Instructions: a] The time limit is 2 minutes.

b] When I say start, answer the question. Continue till I say stop.

XIII: What is the difference between a ‘cupboard’ and a ‘bindi’?

Instructions: a] The time limit is 3 minutes.

b] When I say start, answer the question. Continue till I say stop.
APPENDIX - D

<table>
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<tr>
<th></th>
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<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
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<tbody>
<tr>
<td>01</td>
<td>A student in this class has the chance to get to know all other students.</td>
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<td>02</td>
<td>The class has students with many different interests.</td>
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<td>03</td>
<td>There is a set of rules for the students to follow.</td>
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<td>04</td>
<td>Most of the class finds it difficult to complete the assigned work.</td>
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<td>05</td>
<td>The materials required for teaching learning are easily available in the classroom.</td>
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<td>06</td>
<td>There are tensions among certain students that tend to interfere with class activities.</td>
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<td>07</td>
<td>Most students have little idea of what the class is trying to study.</td>
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<td>08</td>
<td>The intelligent students' questions are answered more sympathetically than those of all average students.</td>
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<td>09</td>
<td>Some students refuse to mix with the rest of the class.</td>
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<td>10</td>
<td>The students seem to enjoy their class work.</td>
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<td>11</td>
<td>There are long periods during which the class does nothing.</td>
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<td>12</td>
<td>Some students in the class consider the work difficult.</td>
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<td>13</td>
<td>Most students seem to have a concern for the progress of the class.</td>
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<td>14</td>
<td>When group discussion takes place all students tend to participate.</td>
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<td>15</td>
<td>Most students cooperate rather than compete with one another in this class.</td>
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<td>CLASSROOM CLIMATE SCALE</td>
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<tr>
<td>16</td>
<td>Students in this class are not in close enough contact to develop likes and dislike for one another.</td>
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<td>17</td>
<td>The class is working towards many different goals.</td>
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<td>18</td>
<td>Students who break the rules are penalized.</td>
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<td>19</td>
<td>The class has plenty of time to cover the prescribed amount of work.</td>
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<td>20</td>
<td>Certain students seem to have no respect for other students.</td>
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<td>21</td>
<td>The objectives of the class are not clearly recognized.</td>
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<td>22</td>
<td>Every member of the class is given the same benefits and respect.</td>
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<td>23</td>
<td>Certain students work only with their close friends.</td>
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<td>24</td>
<td>There is a lot of students' dissatisfaction with the class work.</td>
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<td>25</td>
<td>Class work is frequently interrupted by some students with nothing to do.</td>
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<td>26</td>
<td>Most students in this class are constantly challenged.</td>
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<td>27</td>
<td>Some members of the class do not care what the class does.</td>
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<td>28</td>
<td>Certain students have more influence on the class than others.</td>
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<td>29</td>
<td>Most students in the classroom want their work to be better than their friends’ work.</td>
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<td>30</td>
<td>This class is made up of individuals who do not know each other well.</td>
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<td>31</td>
<td>Different students are interested in different aspects of the class.</td>
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<td>32</td>
<td>There is a right and a wrong way of going about class activities.</td>
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<td>33</td>
<td>There is little time in this class for daydreaming.</td>
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<td>34</td>
<td>Certain students in this class are uncooperative.</td>
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<tr>
<td>CLASSROOM CLIMATE SCALE</td>
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<td>35</td>
<td>Most of the class realizes exactly how much work is required.</td>
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<td>36</td>
<td>Certain students in the class are favored over others.</td>
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<tr>
<td>37</td>
<td>Most students cooperate equally well with all class members.</td>
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<td>38</td>
<td>After teaching learning activity, most students have a sense of satisfaction.</td>
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<td>39</td>
<td>The class is well organized and efficient.</td>
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<td>40</td>
<td>Most students consider the subject matter easy.</td>
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<td>41</td>
<td>Students show a common concern for the success of the class.</td>
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<td>42</td>
<td>Each member of the class has as much influence, as does any other member.</td>
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<tr>
<td>43</td>
<td>Students compete to see who can do the best work.</td>
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<td>44</td>
<td>This teacher stops misbehavior of students with a minimum of class disturbance.</td>
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<td>45</td>
<td>She singles out individual students for punishment and lectures on the offense during teaching.</td>
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<td>46</td>
<td>She selects and uses the most appropriate teaching method for various subjects.</td>
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<td>47</td>
<td>She reviews the previous lesson briefly before beginning a new one.</td>
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<td>48</td>
<td>She checks our class work sincerely and regularly.</td>
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<td>49</td>
<td>She wastes a lot of time in talking about things not related to the lesson being taught.</td>
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<td>50</td>
<td>This teacher insists that a certain amount of work must be done within a given period.</td>
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<tr>
<td>51</td>
<td>Students do very little work in this class.</td>
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<td>52</td>
<td>This teacher takes care to see whether all students in the class are studying attentively.</td>
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<td>53</td>
<td>Plan of work or activities keep on changing in this class.</td>
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</table>
APPENDIX – E

ATTITUDE TO SCHOOL SCALE

Dear Student,

I am undertaking an investigation into the effect of classroom climate on the attitude of students’ towards school. In order to do this, I would like to get some information from you through this form.

Please read each statement carefully and then indicate your opinion on each statement by putting (x) in the space provided beside it. Please put (x) in only one column for each statement. You can give your opinion according to the following scale: Always (A), Frequently (F), Sometimes (S), Never (N).

Kindly answer the questions regarding teachers keeping in mind your class teacher.

Thanking you,

Yours sincerely,

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th>A</th>
<th>F</th>
<th>S</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I wish all the days of a week were Sundays.</td>
<td></td>
<td></td>
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<tr>
<td>2.</td>
<td>I would be unhappy to change my school</td>
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<td>3.</td>
<td>I feel that time passes very quickly when I am in school.</td>
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<td>4.</td>
<td>My school teaches me nothing that will be of any help in my future life.</td>
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<td>5.</td>
<td>I wish all the schools were closed down.</td>
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<td>6.</td>
<td>I look forward to going to school after vacation.</td>
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<tr>
<td>7.</td>
<td>Schools prepare us for life.</td>
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<tr>
<td>8.</td>
<td>I think that going to school is a waste of time</td>
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<tr>
<td>9.</td>
<td>I would love to visit my school even after I pass my S.S.C. Examination.</td>
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<tr>
<td>10.</td>
<td>I am proud of my school.</td>
<td></td>
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<tr>
<td>11.</td>
<td>I avoid keeping friends from my school.</td>
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<tr>
<td>12.</td>
<td>I feel that other schools are much better than mine.</td>
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<tr>
<td>13.</td>
<td>I feel that attendance in the school should not be compulsory.</td>
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<tr>
<td>14.</td>
<td>My school provides good opportunities to the students in studies as well as other activities.</td>
<td>A</td>
<td>S</td>
<td></td>
<td></td>
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<tr>
<td>15.</td>
<td>I am glad my parents sent me to this school.</td>
<td>F</td>
<td>S</td>
<td></td>
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<tr>
<td>16.</td>
<td>I come to school everyday because my parents force me to do so.</td>
<td>A</td>
<td>S</td>
<td></td>
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<tr>
<td>17.</td>
<td>My school gives me training to become a good citizen.</td>
<td>F</td>
<td>S</td>
<td></td>
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<tr>
<td>18.</td>
<td>My school is the best school.</td>
<td>A</td>
<td>S</td>
<td></td>
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<tr>
<td>19.</td>
<td>I would love to join the Past Students’ Association of my school</td>
<td>F</td>
<td>S</td>
<td></td>
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</tr>
<tr>
<td>20.</td>
<td>I would have won more prizes in competitions if I had joined some other school</td>
<td>A</td>
<td>S</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>21.</td>
<td>I expect to get good result in the Board Examination because I come to this school.</td>
<td>F</td>
<td>S</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>22.</td>
<td>My school is the most boring place on earth.</td>
<td>A</td>
<td>S</td>
<td></td>
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</tr>
<tr>
<td>23.</td>
<td>The atmosphere in my school is friendly</td>
<td>F</td>
<td>S</td>
<td></td>
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<tr>
<td>24.</td>
<td>My school does not prepare me well for the S.S.C. Examination.</td>
<td>A</td>
<td>S</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
APPENDIX - F

EXTROVERSION INTROVERSION TEST

This test is composed of fifty statements, each being followed by the words ‘Yes’ and ‘No’. There is no implication of right or wrong in any of the statements and you are asked to consider them from the viewpoint of personal like or dislike. Read the first statement and if you like the idea it expresses draw a line under ‘Yes’. If you dislike it, draw a line under ‘No’. Proceed in the same way with the rest of the statements.

<table>
<thead>
<tr>
<th></th>
<th>Statement</th>
<th>Yes</th>
<th>No</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Be by yourself a great deal.</td>
<td>YES</td>
<td>NO</td>
<td>01</td>
</tr>
<tr>
<td>02</td>
<td>Think of life in terms of pleasure</td>
<td>YES</td>
<td>NO</td>
<td>02</td>
</tr>
<tr>
<td>03</td>
<td>Always be calm and collected</td>
<td>YES</td>
<td>NO</td>
<td>03</td>
</tr>
<tr>
<td>04</td>
<td>Have a great deal of confidence in others</td>
<td>YES</td>
<td>NO</td>
<td>04</td>
</tr>
<tr>
<td>05</td>
<td>Think or dream of what you will do five years from now</td>
<td>YES</td>
<td>NO</td>
<td>05</td>
</tr>
<tr>
<td>06</td>
<td>Stay at home during a social affair</td>
<td>YES</td>
<td>NO</td>
<td>06</td>
</tr>
<tr>
<td>07</td>
<td>Work with many people around you</td>
<td>YES</td>
<td>NO</td>
<td>07</td>
</tr>
<tr>
<td>08</td>
<td>Do the same kind of work all the time</td>
<td>YES</td>
<td>NO</td>
<td>08</td>
</tr>
<tr>
<td>09</td>
<td>Enjoy social gatherings just to be with people</td>
<td>YES</td>
<td>NO</td>
<td>09</td>
</tr>
<tr>
<td>10</td>
<td>Think a great deal before deciding anything</td>
<td>YES</td>
<td>NO</td>
<td>10</td>
</tr>
<tr>
<td>11</td>
<td>Accept suggestions rather than working them out for yourself</td>
<td>YES</td>
<td>NO</td>
<td>11</td>
</tr>
<tr>
<td>12</td>
<td>Quiet rather than exciting amusements</td>
<td>YES</td>
<td>NO</td>
<td>12</td>
</tr>
<tr>
<td>13</td>
<td>Do you like having people watch you</td>
<td>YES</td>
<td>NO</td>
<td>13</td>
</tr>
<tr>
<td>14</td>
<td>Quit a tiresome task</td>
<td>YES</td>
<td>NO</td>
<td>14</td>
</tr>
<tr>
<td>15</td>
<td>Save money rather than spend it</td>
<td>YES</td>
<td>NO</td>
<td>15</td>
</tr>
<tr>
<td>16</td>
<td>Seldom (infrequently) analyze your thoughts or motives</td>
<td>YES</td>
<td>NO</td>
<td>16</td>
</tr>
<tr>
<td>17</td>
<td>Indulge in reverie (day-dream) or thought</td>
<td>YES</td>
<td>NO</td>
<td>17</td>
</tr>
<tr>
<td>18</td>
<td>Have people watch you do things that you do very well</td>
<td>YES</td>
<td>NO</td>
<td>18</td>
</tr>
<tr>
<td>19</td>
<td>Let yourself go when angry</td>
<td>YES</td>
<td>NO</td>
<td>19</td>
</tr>
<tr>
<td>20</td>
<td>Work better when people praise you</td>
<td>YES</td>
<td>NO</td>
<td>20</td>
</tr>
<tr>
<td>21</td>
<td>Have excitement</td>
<td>YES</td>
<td>NO</td>
<td>21</td>
</tr>
<tr>
<td>22</td>
<td>Often meditate and think about yourself</td>
<td>YES</td>
<td>NO</td>
<td>22</td>
</tr>
<tr>
<td>23</td>
<td>Be a leader at a social affair</td>
<td>YES</td>
<td>NO</td>
<td>23</td>
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<tr>
<td>24</td>
<td>Speak in public</td>
<td>YES</td>
<td>NO</td>
<td>24</td>
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<td></td>
<td></td>
<td><strong>YES</strong></td>
<td><strong>NO</strong></td>
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<tr>
<td>25</td>
<td>Do the things that you dream about (day-dream)</td>
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<tr>
<td>26</td>
<td>Rewrite social letters</td>
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<td>26</td>
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<tr>
<td>27</td>
<td>Get things done very quickly rather than being slow and sure in movement</td>
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<td>27</td>
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<tr>
<td>28</td>
<td>Think a great deal</td>
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<tr>
<td>29</td>
<td>Be able to express your keenest feelings (joy, sorrow, anger)</td>
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<tr>
<td>30</td>
<td>Pay little attention to details</td>
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<tr>
<td>31</td>
<td>Be exceedingly careful in meeting people</td>
<td></td>
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<td>31</td>
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<td>32</td>
<td>Associate freely with people holding views opposed to your own</td>
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<td>32</td>
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<tr>
<td>33</td>
<td>Puzzles</td>
<td></td>
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<td>33</td>
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<tr>
<td>34</td>
<td>Act on suggestions quickly rather than stopping to think</td>
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<tr>
<td>35</td>
<td>Read about rather than know a thing</td>
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<tr>
<td>36</td>
<td>Enjoy the story more than the way it is written</td>
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<td>37</td>
<td>Keep a personal diary</td>
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<tr>
<td>38</td>
<td>Keep quiet when out in company</td>
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<tr>
<td>39</td>
<td>Act on the spur of the movement</td>
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<tr>
<td>40</td>
<td>Dislike thinking about yourself</td>
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<td>40</td>
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<tr>
<td>41</td>
<td>Always plan out work before you begin it</td>
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<td>42</td>
<td>Change from one type of work to another frequently</td>
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<td>43</td>
<td>Avoid trouble rather than face</td>
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<td>44</td>
<td>Believe that rumors are important</td>
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<td>45</td>
<td>Confide in others</td>
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<tr>
<td>46</td>
<td>Distrust people you have just met until you get better acquainted</td>
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<td>47</td>
<td>Study others rather than yourself</td>
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<tr>
<td>48</td>
<td>Spend your vacation at some quiet place rather than at a lively resort</td>
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<td>49</td>
<td>Change your opinions easily even when formed</td>
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<tr>
<td>50</td>
<td>Take an active part in all conversations going on around you</td>
<td><strong>YES</strong></td>
<td></td>
<td>50</td>
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</table>

Scoring Key: The underlined word to be given one score and the other one zero.
APPENDIX – G

LOCUS OF CONTROL SCALE

INSTRUCTIONS: Read the statements carefully. For each item, there are two options (a) and (b), put a tick mark on either (a) or (b).

1. a) Careful planning done by students help in attaining their goals.
   b) Planning is not always helpful because things can turn out to be a matter of luck.

2. a) Failure in student’s life is due to lack of efforts made by them for studies.
   b) Failure in students’ life is due to their bad luck.

3. a) Students can achieve better in academics through hard work.
   b) Students’ good fortune affects their academic achievement.

4. a) A systematic study habit determines students’ performance in the examination.
   b) Students’ luck plays an important role in deciding their performance.

5. a) The degree of success lies in the hands of a student.
   b) The degree of success depends upon a number of factors, which are beyond one’s control.

6. a) For choosing courses one needs to fulfill the requirements of the course.
   b) Getting admission in a particular course is sheer luck.

7. a) If a student plans and implements his/her study schedule properly, success is certain.
   b) Whatever has to happen will happen in any case.

8. a) Students are responsible for difficulties and problems faced by them during examinations.
   b) Problems during examination arise due to faulty methods of teaching used by the teachers.

9. a) A student is eligible for the promotion in the next class if he/she possesses required achievement or rank.
   b) A student who is teacher’s favorite or has connection with school management gets the promotion.
10 a) It is the student whose efforts determine his/her rank in the class.
   b) Destiny decides the rank of a student in the class.

11 a) Students can improve their personality through consistent efforts.
    b) Personality cannot be developed, as it is a matter of heredity.

12 a) Destiny does not play any role in deciding future career.
    b) Future career is determined by destiny alone.

13 a) Man is the architect of his own destiny.
    b) Fate holds the key to one’s own future.

14 a) A person is responsible for the events, which occur in his/her life.
    b) The major events in one’s life are determined by external factors.

15 a) One has to establish the position in any institution by struggle and hard work.
    b) Position in the institution is decided by the management.

16 a) People’s misfortune results from the mistakes they make.
    b) Many of the unhappy things in people’s life are due to bad luck.

17 a) When I make plans, I am almost certain that I can make them work.
    b) It is not always wise to plan because many things turn out to be a matter of good or bad luck.

18 a) In any case getting what I want has little or nothing to do with luck.
    b) Many times we might just as well decide what to do by tossing a coin.

19 a) Most misfortunes are the result of lack of ability, ignorance, and laziness or all three.
    b) In the long run the bad things that happen to us are balanced by the good ones.

20 a) Life is pleasant for those who possess strong will power and have strength to do work.
    b) Life is contingent upon various uncontrollable events around.
APPENDIX – H

HEMISPHERICITY DOMINANCE TEST

Place a check mark in the blank if the statement is true for you. You may check both the statements in a pair or none whatever fits you.

1. ___ I understand clearly the information passed through gestures and action.
   ___ I understand clearly the information when passed through word by others.

2. ___ I have the habit of talking while reading or writing.
   ___ I need complete silence while reading or writing.

3. ___ I get clarity while learning anything by doing.
   ___ I can learn easily through logical reasoning, without doing experimentally.

4. ___ I like to learn things by handling light tools, electronic equipments and other tools in the laboratory.
   ___ I like to study for the vocations relating to building construction, industries and handling of big machines.

5. ___ I understand things when studied and analyzed as a whole.
   ___ I understand easily when something is taken and analyzed in parts.

6. ___ Lessons based on timely modifications without prior planning are helpful for the leaning.
   ___ Lessons based on prior planning is helpful or the learning.

7. ___ I understand the lessons easily when taught through the examples I can see.
   ___ I understand the lessons easily when taught through the concepts.

8. ___ I understand fully the lessons by learning the basic concepts.
   ___ I learn fully the lessons by knowing the facts clearly and separately.

9. ___ I learn best in the class where the instructor uses visual presentation.
   ___ I learn best in the class where the instructor uses verbal presentation.
10. __I take time to understand and follow the habits.
   ___I easily learn and follow the habits.

11. ___When I think about the things, I like to think bout it as a whole unit
    ___When I think about things, I like to separate it into segments and
    think about its merit and demerits.

12. ___I understand easily when the general law was first explained and
    their examples are given.
    ___I find out the general law easily when examples are given.

13. ___Thinking that there are a number of answers to a particular question,
    I give a number of answers.
    ___Believing that there can be only one particular answer to a particular
    question, I will try to find out the answer.

14. ___I like to solve problems through independent thinking.
    ___I will try to solve problems in agreement with the opinion of others.

15. ___I will remember my friends face rather then their names.
    ___I will remember my friends names rather than their faces.

16. ___I am able to remember and recall shapes and figures.
    ___I am able to remember and recall words.

17. ___I like to lie down while engaging in deep thinking.
    ___I like to sit erect while engaging in deep thinking.

18. ___I am able to analyze and remember the music and its melody.
    ___I am able to identify any person through his voice without seeing.

19. ___I forget the things which I have to do.
    ___I never forget the things which I have to do.

20. ___I have strong memory and remembrance for images and pictures.
    ___I have strong memory and remembrance for voices.

21. ___I like to draw pictures.
    ___I like to write and talk.

22. ___I have the habit of imagining the things which I am going to do as
    an experiment.
    ___I have the habit of analysing the things I learn.
23. ___ I think that I am an innovative or a creative person.
    ___ I think that I have got more intellectual ability when compared to creative ability.

24. ___ I like to invent something in an imaginative way.
    ___ I like to improve upon things.

25. ___ I like to expose my feelings through dance, drama, poetry, and songs.
    ___ I frankly expose my feelings in words.

26. ___ I have the ability to tell about the characteristic features of things while touching.
    ___ I have no capacity of telling about the characteristic features of things while touching.

27. ___ I have the habit of writing imaginative stories.
    ___ I have interest in writing essays and scientific papers.

28. ___ I am able to organise and express the ideas with relationship.
    ___ I can express the ideas in a sequence as they occur.

29. ___ I can easily find directions even in unfamiliar places.
    ___ I can find direction only in the familiar places.

30. ___ I like to assume the result of the actions or things before its completion.
    ___ I am not interested in assuming the results.

31. ___ I am able to do several things at a time.
    ___ I am able to do one thing at a time.

32. ___ I like to pre plan the things which I am going to do.
    ___ I like to day dream about the things which I am to do.

33. ___ I think and imagine the problem as a whole before solving.
    ___ I discuss or talk about the methods of solving the problem.

34. ___ I like to solve complex problems.
    ___ I like to solve simple problems.
35. ___I think and imagine the accidents occurred in the past.
    ___I analyse the details of accidents occurred in the past.

36. ___I like to identify and finish uncompleted works.
    ___I like to examine completed works.

37. ___I like to solve the problems by analyzing the reasons through internal feelings.
    ___I like to solve the problems of analyzing the reasons through intelligence.

38. ___I hope that everything will be all right.
    ___I often feel that everything will be failure.

39. ___I like to evaluate or conclude the work with the help of personal experience and internal inspirations.
    ___I like to evaluate or conclude the work through basic reasons.

40. ___I like to solve any hindrances in a playful way.
    ___I like to solve the problems by calculating the profit and loss.

41. ___I like to be soft and obedient.
    ___I like to be authoritative and brave.

42. ___I am afraid of talking freely in the midst of others.
    ___I talk freely in front of others.

43. ___I like to involve in or do the artistic and aesthetic works.
    ___I like to involve myself in worldly affairs.

44. ___Interested in knowing the activities and characters of men.
    ___Interested in knowing the activities and characters of women.

45. ___I am not interested in games and sports.
    ___I like to participate in games and sports.

46. ___I believe that I am not having the characteristic of punishing and controlling others.
    ___I believe that I am having the characteristic of punishing and controlling others.
47. ___ I like to follow the peaceful ways.
    ___ I become angry very easily.

48. ___ I like to think and do the funny things.
    ___ I am not interested in thinking or doing funny things.

49. ___ I will try to adjust or tolerate the things which I dislike the most.
    ___ I will not adjust or tolerate the things which I dislike the most.

50. ___ I have got strong determination and ambition to win in all the things
    which I am undertaking.
    ___ I do not have any strong determination or ambition to succeed in all
    my works.

Scoring key: First item indicates right hemisphere
    : Second item indicates left hemisphere
    : Checking of both items indicates integrated hemisphere.
APPENDIX - I

MOTIVATIONAL FACTORS SCALE

INSTRUCTIONS: In this form twenty five statements are given. Next to each statement there are four columns with the following headings:

A = Always    S = Sometimes    F = Frequently    N = Never

Please read carefully each statement and put a tick mark on appropriate answer as per your opinion.

1) I enjoy asking question in the class
   A        F    S    N
2) When the teacher is teaching, I am full of curiosity
   A        F    S    N
3) I feel inferior in asking question in the class.
   A        F    S    N
4) Teacher’s information is not sufficient for satisfying my curiosity.
   A        F    S    N
5) I accept whatever the teacher says unquestioningly.
   A        F    S    N
6) Whenever I read or see something new, my mind becomes full of questions immediately
   A        F    S    N
7) I try more than one method to solve a mathematical problem.
   A        F    S    N
8) I do not attempt to solve difficult mathematical problems.
   A        F    S    N
9) I do not mind spending long hours in order to come out with the best possible work...
   A        F    S    N
10) I can not sleep peacefully unless I study well.
    A        F    S    N
11) I never use my brain for solving puzzles
    A        F    S    N
12) I like readymade answer and therefore prefer to use a guide. $A^1 F^2 S^3 N^4$

13) I like to write an essay, which is different from everybody in my class. $A^4 F^3 S^2 N^1$

14) I can not think of other possible ways of solving a problem apart from what the teacher teaches. $A^1 F^2 S^3 N^4$

15) I like to draw the same picture in different ways. $A^4 F^3 S^2 N^1$

16) I am unable to make use of new ideas to write answers to questions and essays. $A^1 F^2 S^3 N^4$

17) I like to collect good ideas of others and to restructure them. $A^4 F^3 S^2 N^1$

18) I enjoy making something new from waste material. $A^4 F^3 S^2 N^1$

19) I can work only on ideas given by teachers/parents. $A^1 F^2 S^3 N^4$

20) I like to read different kinds of books such as novels, science fiction, news magazines, autobiographies and encyclopedias. $A^4 F^3 S^2 N^1$

21) I am comfortable only if I have to work in groups. $A^1 F^2 S^3 N^4$

22) I do not like to handle scientific apparatus independently. $A^1 F^2 S^3 N^4$

23) I am not able to do much homework at a time. $A^1 F^2 S^3 N^4$

24) I can not do well when examination in two subjects are on the same day. $A^1 F^2 S^3 N^4$

25) I can not handle many activities along with studies at the same time. $A^1 F^2 S^3 N^4$

Scoring Key: The superscripted figures indicate scores.
APPENDIX - J

SOCIO ECONOMIC STATUS INVENTORY

Thirty – six multiple statements are given. Put a tick mark for each statement showing your appropriate choice.

1. I live in
   a. nuclear family. ²
   b. extended family ³ (with grandparents)
   c. joint family. ¹

2. Number of family members in my family are .
   a. two ⁵
   b. three ⁴
   c. four ³
   d. five ²
   e. six or more. ¹

3. I live in
   a. a bungalow ⁴
   b. a flat ³
   c. a chawl ²
   d. a hut. ¹

4. I live in
   a. an ownership house ³
   b. home provided by Company. ²
   c. rental house. ¹

5. My home consists of
   a. four rooms ⁴
   b. three rooms. ³
   c. two rooms(one room and a kitchen.) ²
   d. only one room. ¹

6. We have
   a. a common toilet for all living in adjoining flats. ²
   b. one toilet in the house. ³
   c. bath and toilet attached to each ⁴
   d. no toilet. ¹

7. We have.
   a. a part time servant. ²
   b. a full time servant. ³
   c. a cook. ⁴
   d. an ayah. ²
   e. a driver. ²
   f. no servant. ¹

8. We possess the following articles.
   a. a bicycle ¹
   b. a moped ¹
   c. a scooter. ¹
   d. a motorcycle. ¹
   e. our own car. ²
   f. company given car. ²
   g. more than one car. ²
   h. any other (specify.) ²
9. Our kitchen has
   a. a kerosene stove.  
   b. electric stove.   
   c. gas stove  
   d. a mixture grinder  
   e. cooking range  
   f. oven.  
   g. microwave oven.  
   h. food processor.  
   i. refrigerator.  
   j. roti maker.  

10. We have
    a. radio  
    b. record player.  
    c. cassette player  
    d. walkman.  
    e. video games.  
    f. stereo system.  
    g. black/white T.V.  
    h. colour T.V.  
    i. V.C.P./V.C.R.  
    j. washing machine.  
    k. vacuum cleaner.  

11. We have
    a. telephone  
    b. mobile.  
    c. pager  
    d. cordless  
    e. computer  

12. We have
    a. camera.  
    b. video camera.  
    c. music projector.  
    d. air cooler.  
    e. air conditioner  

13. Our bedroom furniture includes.
    a. double bed.  
    b. single bed.  
    c. no cot.  
    d. separate cupboard for all members.  
    e. shared cupboard with my brother and/or sisters.  

14. our drawing room has
    a. a sofa cum double bed.  
    b. a sofa set  
    c. sofa cum single bed.  
    d. folding chairs.  
    e. a center table.  
    f. a carpet.  
    g. wall unit.  
    h. cabinet.  

15. Our dining room furniture includes.
    a. dining table  
    b. six or more chairs.  
    c. side board.  

16. I study
    a. on my own study table.  
    b. share a table with my brother or sister.  
    c. use dining table as a study table.  
    d. without a study table.  

17. I keep all my books and belongings in
    b. a common book shelf.  
    c. wherever I get space.  

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18. Monthly income of my family is
   a. less than rupees 1000    b. more than 1000 but less than 5000.
   c. more than 5000 but less than 15000.  d. more than 15000.

19. Educational level of my father is.
   a. MD/MS/PhD  b. CA/ME/LLM/M. Tech
   c. MBBS/BE/B. Tech/ LLB.    d. MA/M.COM/M.SC/MED.
   e. BA/B.COM/B.SC/BED  f. Diploma (pl. specify.)
   g. HSC  h SSC
   j. illiterate.  k. any other (pl. specify.)

20. Educational level of my mothers is.
   a. MD/MS/PhD  b. CA/ME/LLM/M. Tech
   c. MBBS/BE/B. Tech/ LLB.    d. MA/M.COM/M.SC/MED.
   e. BA/B.COM/B.SC/BED  f. Diploma (pl. specify.)
   g. HSC  h SSC
   j. illiterate.  k. any other (pl. specify.)

21. Occupation of my father is.
   a. self employed business  b. self employed professional.
   c. job.    d. daily wage earner.  e. unemployed.

22. My father is employed as
   ( Pl. specify the occupation.)

23. Occupation of my mother is.
   a. self employed business  b. self employed professional.
   c. job.    d. daily wage earner.  e. house wife.

24. My mother is employed as
   ( Pl. specify the occupation.)

25. My family subscribes newspapers. Yes / no.

26. Names of the newspapers subscribed
   a.
   b.

27. My family subscribes magazines. Yes / no.

28. Names of the magazine subscribed (1 each)
   a.
   b.
29. We read the following kinds of magazines.
   a. entertainment.  
   b. film.  
   c. sports.  
   d. scientific.  
   e. politics.  
   f. business.  
   g. health.  
   h. general information.  

30. My family has library membership.  Yes / no.  

31. My family has club membership.  Yes / no.  

32. We read the following kind of magazines.
   a. comics.  
   b. stories (fiction).  
   c. biographies.  
   d. scientific.  
   e. professional books.  
   f. encyclopedia.  

33. My family listens to radio news and talks.
   a. always.  
   b. often.  
   c. sometimes.  
   d. never.  

34. We watch T.V. news and programmes.
   a. always.  
   b. often.  
   c. sometimes.  
   d. never.  

35. My family members visit exhibition/drama/dance/music/movies.
   a. always.  
   b. often.  
   c. sometimes.  
   d. never.  

36. In our vacation my family members visit.
   a. our native place.  
   b. anywhere in Maharashtra.  
   c. anywhere in India.  
   d. abroad.  
   e. nowhere.  

Scoring Key: The superscripted figures indicate scores.
APPENDIX - K

Name of the Teacher: Ms. Safia Mukadam

School: V.W.A.H. School

Subject: English

Method / Model: Synectics (Strategy one)

Topic: An Autobiography of Text Book

Previous Knowledge: Students know how knowledge got assimilated from generation to generation.

Resource Material: Joyce and Weil’s ‘Models of Teaching’.

Objectives: To enable the students to
1) acquire knowledge of new words
2) comprehend the passage
3) apply the knowledge of new words.

Specifications: 1) Student recalls new words
2) Student explains the content of the passage.
3) Student uses new words in their everyday language.

Teacher asks questions to introduce the essay topic
Introduction: How was man able to pass down knowledge in the past?
What was required for them to do so?
How do we obtain knowledge?

Statement of Aim: Today, we are going to write an essay on “An Autobiography of a Tex-Book.”
Main Teaching Points

A sample essay on the basis of Synectics

An autobiography of a Tex-Book

I am a text-book. I give knowledge to the child who is like my son. Just like a bird protects its young one. I protect my son from going astray. I teach him to be independent. I teach him how to eat, how to talk, how to play, run, skip, jump. Just like how the bird teaches its young one to search for its food, to flap its wings and fly in the sky.

I want my son to be a good human being to help mankind and be an asset to the world. So that the world thinks highly of him and his upbringing which was all because of me. No bird would ever want its young one to be wicked and play truants on the others and waste his life. I am like that bird who wants my son to be like that baby who will grow and help others.

Just like the bird tries to protect the baby from the others who come to harm it. The bird does not allow any child to throw stones on its baby. In the same way I do not want any harm to this child of mine. I want to protect him from all the bad things on earth. I want him to understand that there are bad people on earth but he should not become like them and be a curse to mankind.

Method

(Learning experience and various techniques)

The teacher instructs the students that we are not going to discuss the essay in the routine way. We are going to use a new way of writing this essay.

Phase One:
Teacher asks the students showing a Text-Book.

1) How is this text-book like any other text-book?
2) What is the present condition of this text-book?

Phase Two:
Suppose I ask you to give me a direct comparison. Something like a machine. Tell me something about a machine that has the qualities of a text book, as you see it.

The teacher instructs the students that they are focusing on the different types of machines. What is the thing that has the qualities of a text-book? What is the machine that has the strangest comparison between it and the text-book?

How does a vacuum cleaner work?
Teacher asks students, “Don’t look back and make analogical comparison too soon”. Teacher makes notes of students’ responses on the board.

Phase Three:
Try being a vacuum cleaner. What does it feel like to be one?
You put yourself in the place of a vacuum cleaner and feel like it?
Try to be a vacuum cleaner.
When the bird becomes old, the baby bird will take care of it. This is the way of life. When I become old and I am in tatters I want him to take care of me. As I have taken good care of him when he was a child. My son does take good care of me. He has given me the best place in his bookshelf. He has covered me so well with a plastic cover so that I do not get spoilt. He gives me to his friends to read and is very prompt in taking me back from them. They also benefit from my expertise. He is the best son in the world and I am the luckiest father. God bless my son for taking good care of me.

Phase Four:
Let's look at the notes. Can you pick two words that argue with each other? O.K. which one has the truest ring of conflict.

Phase Five:
All right. Can you think of a direct analogue, an example from the animal world of angry-gain? Bird protecting its young one. Which of all these things, you have just mentioned make the most exciting analogy? How can bird protecting its young one describe the text-book? All right, what do we know about 'the bird protecting its young one'. What happens at the end?

Phase Six
How can we use this information to tell us something about the text book?
Lastly, the teacher makes the students develop the essay by comparing the text-book with the bird protecting its young one. The teacher also makes them realise how their essays can be different by using this technique and they would be able to think of more ideas.
Name of the Teacher: Ms. Safia Mukadam

School: V.W.A.H. School

Subject: Geography

Method / Model: Brainstorming

Topic: Earthquakes and Volcanoes.

Previous Knowledge: Students know about the landform of the earth.

Resource Material: Geography Text Book of Std. VIII

Objectives: To enable the students to
1) acquire knowledge about the earthquake zones; types of earthquakes.
2) understand the causes of earthquakes, the consequences and the precautions to be taken during earthquakes.
3) apply the knowledge and understanding of the earthquakes.

Specifications: 1) The student locates the earthquake zones on the map.
2) The student states the types of earthquakes.
3) The student explains the causes, consequences of earthquakes and the precautions to be taken during earthquakes.
4) The student expresses about the life and property lost during earthquakes.

Teacher asks questions to introduce the topic

Introduction: what are the changes that you have observed on the surface of the Earth? when do these changes take place rapidly? what do the people all over the world feel?

Statement of Aim: Today, we are going to learn about earthquakes in the lesson ‘Earthquakes and Volcanoes’.
The Surface of the earth is unstable and undergoes changes. This is caused by external processes.

Earthquakes and volcanoes are caused by internal processes.

**Earthquakes**: The sudden tremors or shaking of the earth's crust for a few seconds is called an earthquake.

**Causes of Earthquakes**
1) Faults dislocate and earth moves up or down or to the sides.
2) At the time of volcanic activity, the earth's surface receives tremors due to the internal movements.
3) Earth's crust is made of seven plates and several smaller ones. They float on semi-fluid. These plates move and cause the earth to tremor.

**Types of Waves**
Seismic waves originate from focus and travel in all directions. Place directly above is the epicenter. Shock is of greater intensity. Primary waves reach the ground surface and move forward and backward. Secondary waves are more destructive than primary waves. These waves move perpendicular to the direction of the waves. Surface or long waves originate at

<table>
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<tr>
<th>Main Teaching Points</th>
<th>Method</th>
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<td>The teacher begins by stating the problem in the form of following questions: What happened to the people of Bhuj? What did they do to help themselves? How did the people all over the world feel? What did they do to help the needy? How do the people feel losing life and property? What was the state of people who saw everything collapse in front of their own eyes? How do the close relatives feel on the loss of their dear ones? In the light of these questions the students are asked to redefine the problem. The new queries that crop up are: What happens when there is an earthquake? Why do earthquakes take place? What are the consequences of the earthquakes? What is there under the earth that makes it tremor like a leaf? What are the precautions that should be taken during earthquakes? What should one do and not do during earthquakes? Where do earthquakes frequently occur? The students are asked to brainstorm. But certain instructions have to be followed by them. 1) No criticism is allowed. 2) Suggest ideas however wild they may be. 3) Suggest as many ideas as you can. 4) You can use others ideas and build up another idea on it. The students are asked to start brainstorming. The teacher only keeps discipline.</td>
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<tr>
<td>Learning experience and various techniques</td>
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</tbody>
</table>
the epicenter and travel along the ground surface. They are the most destructive.

Earthquake Zones: These zones are on the boundaries of the plates. Earthquake Zone in India: Indian plate moves from South to North. That is why there are earthquakes in Himalayan region.

Consequences: Cracks develop, some grounds are raised, some subside, landslides occur, rivers change course or disappear, wells dry up or water level rises suddenly bridges and buildings collapse, roads and railways get damaged, destroys houses and life. Earthquakes taking place at the bottom of the sea cause huge waves called Tsunami.

Precautions to be taken in an earthquake zone

1) Do not stand near building.
2) Try to run out into the open.
3) Stand under doorframe, table, bed.
4) Switch off lights, gas, taps.
5) Attend to the victims.

talking at a time, to ask one to wait and let the other finish expressing his view. Teacher encourages the students to think of other ideas, when there is silence in the class and so on. The teacher asks the students to write down the best solutions from the many suggested during ideation stage. Lastly, let the students apply the solutions to the problem and make a note of it.

The teacher finally relates the students suggested ideas with the whole content and thus teacher narrates the whole content associating the content with the students' ideas.
Name of the Teacher: Ms. Safia Mukadam

School: V.W.A.H. School

Subject: History

Method / Model: Role Playing

Topic: Dawn of the Modern Age.

Previous Knowledge: Students know about the condition of India prior to the British Rule.

Resource Material: History Text Book of Standard VIII.

Objectives: To enable the students to
1) acquire knowledge about the condition of the people in the fifteenth century.
2) understand the reformation and the commercial rivalry that took place.

Specifications: 1) The student states the condition of the country in the fifteenth century.
2) The student explains the reformation that took place.
5) The student discusses how the commercial rivalry lead to growth of trade and ultimate establishment of colonies.

Teacher asks questions to introduce the lesson

Introduction: Before the Britishers came to India what was the state of our country? How would you describe the people of our country then? Were they educated? Did they believe in superstitions? What changes have taken place in this modern world?

Statement of Aim: Today, we shall study about the transition period between the traditional society and the Modern Age in the lesson, “Dawn of the Modern Age.”
Beginning of a change in Medieval Europe: Till 15th century, European society was under feudal lords and clergy. While the monarchies were comparatively weak. Common people suffered under both feudal lords and clergy. Thinkers like Roger Bacon and Thomas Aquinas attacked traditional ways of thinking.

Nature of Renaissance: Intellectual revolution lead to the revival of ancient literature written in Greek and Latin. Invention of printing press lead to spread of learning. Formerly stories of God but now narrated new stories deputing human emotions. Copernicus and Galileo advanced new theories in science which challenged the prevalent ones. Which gave rise to reforms.

The Reformation: Church had hold, Bible was in Latin. So they could not read. The clergy took advantage and gave more importance to rituals. They exorted money in the name of religion. Thinkers like Wyldif, Erasmus, Calvin raised voice. Bible was translated in regional languages. Martin Luther issued pamphlets against church. He openly challenged the pope just because he protested against his followers come to be known as 'protestants'

Rise of Nation - States: Power of feudal lords declined and that of kings increased. There was a rise of feeling of unity among people

Main Teaching Points

| Method |
|---|---|
| **(Learning experience and various techniques)** |
| Teacher announces to the class, “We are going to learn this lesson by using the role playing model of teaching.” |

Phase one

What do you think are the causes of the tremendous changes that are taking place in this modern world? In the past do you think that people in Europe were any different than what they are today? What do you think the people then were like?

There are certain characters which you will have to enact.

Phase two

The teacher selects the participants after analysing the roles.

The characters are of clergy, feudal lords, king, common people, modern thinkers, Arabs and big businessmen.

Phase three

Each character is given a card on which instructions are written. The teacher first sets the stage, the teacher gives instructions to the students, “It is the fifteenth century. This was the period when the common people were under the influence of the clergy and the feudal lords.

Teacher instructs the clergy: What would you tell the people about religion so that they would remain under you? Teacher hands over the card to each participant with instructions written on it.
because of common race, language, tradition and common political and economic interest.

**Trade of Europe with Asia:**
Changes took place in economic field. Arab merchants brought spices, precious stones, fine cotton and silk cloth, sugar etc from Asian countries to Europe. At the end of 15th century European sailors discovered new routes to Asia. European trade expanded profits increased, they became rich. There was commercial rivalry.

**Rise of mercantilism:** Increased in 17th century. Resourceful merchants, adventurous sailors, ambitious kings supported European trade. Rulers provided incentives to promote trade. European merchants became rich. They utilized money to increase production goods.

**Establishment of trading companies:** Lot of risk was involved. So trading companies were formed English East India Co. was one such company which started trading with India in the 17th century.

**Effects of the growth of trade in Europe:** Barter system gave way to use of coins of precious metals like gold, silver etc. Cities like London, Antwerp, Dieppe, Bristol became new trading centers. Credit given by banks increased considerably. Trade and related occupations gave rise to new class of people, bankers, brokers, shopkeepers, clerks, accountants, etc. Middle class people were not bound by traditional ideas.

Teacher instructs the feudal lords:
How would you be able to oppress the people so that you make a lot of money and they remain poor forever?

Teacher instructs the king: You were in the background while the clergy and the feudal lords were powerful. How would you feel and how would you react?

Teacher instructs the common people:
You are poor oppressed people. Your condition is really bad. How would you feel?

Teacher instructs the Modern Thinkers: You come to the rescue of the common people. How do you think you can improve the condition of the people?

Teacher instructs the Arabs: You are the trade intermediaries between the European countries and the Eastern world. What do you trade in?

Teacher instructs the big businessmen: There is only one route left through the sea. You have money, what will you do? What will you collectively do to make more money?

The card contains the sequence in which the students are going to play their roles. The students express their feelings in their own words.

**Phase Four:**
The teacher instructs the observers to look for the feelings of the role players and their dialogues.
Political life was also affected by the growth of trade. Merchants supported their kings for their own benefit. Kings also supported them therefore prosperity of the country depended upon them.

**Establishment of Colonies:** First in America they acquired rich territories. Spain set up its colonies in south and central America. England – coast line of the Atlantic ocean in North America. Dutch-control of Indonesia in South east Asia. In India, the Portuguese were the first. They were followed by English, the Dutch and the French. Later European set up colonies in Africa and Australia as well. To earn more profits they imposed various restrictions on their colonies. It resulted in economic exploitation of the colonies. In course of time they suppressed the original inhabitants and became rulers. This policy is called colonialism. Thus this was the direct result of the growth of trade of European countries.

<table>
<thead>
<tr>
<th>Phase Five</th>
<th>The role play begins. Each student expresses his views one after the other.</th>
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<tbody>
<tr>
<td>Phase Six</td>
<td>After the role playing is over the audience discuss the roles and some students volunteer to participate in the next round.</td>
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<tr>
<td>Phase seven</td>
<td>Again the role is played with the same characters but different students.</td>
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<td>Phase eight</td>
<td>There is revaluation of the role players.</td>
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<td>Phase nine</td>
<td>Teacher makes the students relate to present times.</td>
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<td>Lastly, the teacher explains the whole content matter by associating it with the dialogues and feelings of the students.</td>
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</tbody>
</table>
**Name of the Teacher:** Ms. Safia Mukadam  
**School:** V.W.A.H. School  
**Subject:** Geography  
**Method / Model:** Inquiry Training  
**Topic:** Eclipses  

**Previous Knowledge:** Students know when and how shadows are casted.  

**Resource Material:** Joyce and Weil's 'Models of Teaching'  
Geography Text Book of Standard VIII.  

**Objectives:** To enable the students to  
1) acquire knowledge about eclipse and its types.  
2) understand the characteristics of eclipse.  
3) apply the knowledge of eclipse in finding its effects.  

**Specifications:**  
1) The student states what an eclipse is and what are the types of eclipse.  
2) The students explains its characteristics.  
3) The student discusses about its effect.  

**Teacher asks questions to introduce the lesson**  

**Introduction:**  
What happens when an object comes in front of the light?  
What is the shape of the shadow casted?  

**Statement of Aim:** Today, we are going to learn about 'Eclipses'
Eclipses are caused because of the revolution of the moon.

Lunar Eclipse: On a full moon day, the earth is between the moon and the sun. When the moon, the earth and the sun are in a straight line, the earth’s shadow falls on the moon. A lunar eclipse takes place.

The shadow casted by the earth is of two types, 1) the umbra is the dark central portion of the shadow and 2) the penumbra is the less dark portion surrounding it.

Types of Lunar Eclipse
a) A partial lunar eclipse: When only a part of the moon appears.
b) Total lunar eclipse: When the whole of the moon appears dark.

Characteristics of lunar eclipse:
1) All lunar eclipses take place on a full moon day; but not on every full moon day.
2) The plane of the moon’s orbit makes an angle of 5° 8’ with the plane of the earth’s orbit.
3) A lunar eclipse can be seen in the entire area where it is night.
4) A lunar eclipse can last for a maximum duration of 1 hour and 45 minutes.
5) In one year there are at least 2 and at the most 3 lunar eclipses.

Method
(Learning experience and various techniques)
Teacher narrates
We are going to use a new technique to learn today’s lesson.

Phase one
I want you to experience the creation of new knowledge. So you may ask me questions where the answers could be either ‘yes’ or ‘no’. I want you to gather facts, raise doubts and clarify elements. So that you can find the possible causal relationships.

Teacher instructs: look at the pictures on the chart and try to find answers to the questions put up.
Solar Eclipse: On a new moon day, the moon is between the earth and the sun. When the earth, the moon and the sun come in a straight line, the shadow of the moon falls on the earth. In those parts of the earth where this shadow is casted, a solar eclipse takes place.

Types of Solar Eclipse:

A partial solar eclipse: When a part of the sun appears dark. It is in the penumbra of the moon’s shadow.

Total solar eclipse: Entire solar disc appears dark. It is in the umbra of the moon’s shadow. It lasts for 7 minutes 30 seconds at the most.

Annular Solar Eclipse: Moon is smaller than the sun. When the moon is at the apogee on a new moon day, the shadow of the moon cannot reach the earth. If we look at the sun at this time from an area which is infront of the umbra, only the central part of the sun appears dark surrounded by a ring of light. This is annular solar eclipse. It lasts for only 0 to 20 seconds.

Characteristics of Solar Eclipse:

1) All solar eclipse takes place on a new moon day. But not on every new moon day.
2) The plane of the orbit is $5^\circ 8'$ with the plane of the earth’s orbit.
3) The solar eclipse is visible only from those parts of the earth where the moon’s shadow falls.
4) A partial solar eclipse is seen from the areas falling in the moon’s penumbra.

Questions:

1) What do you think should be the position of the three figures for an eclipse to take place?
2) What kind of an eclipse is it?
3) Where will there be partial eclipse?
4) Where will there be total eclipse?
5) What happens when there is partial eclipse?
6) Why do lunar eclipse take place at night?
7) Why do solar eclipse take place during day time?
8) What are the characteristics that can be drawn of lunar eclipse?
9) What are the characteristics that can be drawn of solar eclipse?
10) What are the effects of solar eclipse?

Phase two

Students gather information about the objects and the occurrences.

Phase three

The students try to isolate those questions, which enable them to form the generalization. The teacher only
in the moon’s penumbra, and the total solar eclipses are visible from the areas falling in its umbra.

5) In one year, there are at least 4 and at the most 5 solar eclipse effects of solar eclipses.

Effects of Solar Eclipse:

1) It becomes dark in the day and stars and planets become visible in the sky.
2) The hot and bright corona around the sun can be seen clearly at the time of a total solar eclipse.
3) The unexpected darkness at the time of solar eclipse confuses animals.

...guides the students so that they do not jump to conclusions before all the details have been obtained.

Phase four
Students try to formulate explanation for the occurrences.

Phase five
Students are made to analyse their pattern of enquiry. To find what were their faults and what were their strengths. And then the teacher instructs that they would be able to use this method to find explanations to most of their problems.

Finally, the teacher organises the whole lesson by associating it with whatever the students had concluded during the inquiry.
**Name of the Teacher:** Ms. Safia Mukadam  

**School:** V.W.A.H. School  

**Subject:** English  

**Method / Model:** Synectics (Strategy two)  

**Topic:** J. C. Bose  

**Previous Knowledge:** Students Know about Scientists.  

**Resource Material:**  
- English Textbook of std VIII  
- Joyce and Weils- Models of Teaching  

**Teaching Aids:** Charts.  

**Objective:** To enable the students  
1) to acquire knowledge about new words from the passage.  
2) to understand the procedure of using comparisons.  
3) to apply the knowledge of comparisons.  

**Specifications:**  
1) The student states the meanings of new words.  
2) The student explains how comparisons can be used.  
3) The student compares and follows the lesson.  

**Teacher asks questions to introduce the lesson.**  

**Introduction:** Name some scientists of the world.  
What were their inventions?  
Who discovered that plants have life?  

**Statement of Aim:** Teacher announce: Today we are going to learn a lesson ‘J.C. Bose’ from your text-book.
J.C. Bose
The experimenter experiments with waste materials and makes big inventions.

J.C. Bose devised a machine that would make visible the growth of plants. He labored for long years to perfect this instrument.

At Bose Institute of Calcutta, J.C. Bose himself took the author around and showed him his inventions. They even saw the working of the machine. They saw the plant breathing. They also saw the shuddering reaction of the plant to an electric shock. They saw the plant exhaling oxygen. When a stimulant was added to the water in which the plant was, the exhaling of the oxygen became faster.

Transplantation is very fatal to a full-grown tree; it dies of shock. Just as when an arm or a leg is amputated without anesthesia most men would collapse.

An overdose of chloroform is as fatal to plant as it is to man. The author was shown the instrument which recorded the beating of a plant’s ‘heart’. The minute pulsation which occur in the layer of tissue immediately beneath the outer rind of the stem, are magnified literally millions of time. They are recorded automatically.

The heart beat of a plant is very slow but when a grain of caffeine is added the heart beat becomes fast exactly like it affects the heart of the animal.

<table>
<thead>
<tr>
<th>Main Teaching Points</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>J.C. Bose</td>
<td>(Learning experience and various techniques)</td>
</tr>
<tr>
<td>The experimenter experiments with waste materials and makes big inventions.</td>
<td>The teacher presents the students with a short substantive paragraph.</td>
</tr>
<tr>
<td>J.C. Bose devised a machine that would make visible the growth of plants. He labored for long years to perfect this instrument.</td>
<td>J.C. Bose has devised machines that would make visible the growth of each plant cell and their process of digestion. The affect of a stimulant on the leaf is its faster growth. During transplantation the effect of chloroform, if given in right proportion, on the nucleus is flourishing of the tree. An overdose of chloroform can develop spots on the plant and may lead to the falling of the tree.</td>
</tr>
<tr>
<td>At Bose Institute of Calcutta, J.C. Bose himself took the author around and showed him his inventions. They even saw the working of the machine. They saw the plant breathing. They also saw the shuddering reaction of the plant to an electric shock. They saw the plant exhaling oxygen. When a stimulant was added to the water in which the plant was, the exhaling of the oxygen became faster.</td>
<td>Next the students are told: List the connections you can see between the description of the plant and the human body. Certain elements of the human body are written in the left hand column. In the right hand column jot down the elements in the paragraph on plants that you think are parallel.</td>
</tr>
<tr>
<td>Transplantation is very fatal to a full-grown tree; it dies of shock. Just as when an arm or a leg is amputated without anesthesia most men would collapse.</td>
<td>Body</td>
</tr>
<tr>
<td>An overdose of chloroform is as fatal to plant as it is to man. The author was shown the instrument which recorded the beating of a plant’s ‘heart’. The minute pulsation which occur in the layer of tissue immediately beneath the outer rind of the stem, are magnified literally millions of time. They are recorded automatically.</td>
<td>Each cell</td>
</tr>
<tr>
<td>The heart beat of a plant is very slow but when a grain of caffeine is added the heart beat becomes fast exactly like it affects the heart of the animal.</td>
<td>Muscles</td>
</tr>
<tr>
<td>The heart beat of a plant is very slow but when a grain of caffeine is added the heart beat becomes fast exactly like it affects the heart of the animal.</td>
<td>Heart</td>
</tr>
<tr>
<td>The heart beat of a plant is very slow but when a grain of caffeine is added the heart beat becomes fast exactly like it affects the heart of the animal.</td>
<td>Whole body</td>
</tr>
<tr>
<td>The heart beat of a plant is very slow but when a grain of caffeine is added the heart beat becomes fast exactly like it affects the heart of the animal.</td>
<td>Disease</td>
</tr>
<tr>
<td>The heart beat of a plant is very slow but when a grain of caffeine is added the heart beat becomes fast exactly like it affects the heart of the animal.</td>
<td>Anesthesia</td>
</tr>
<tr>
<td>The heart beat of a plant is very slow but when a grain of caffeine is added the heart beat becomes fast exactly like it affects the heart of the animal.</td>
<td>Death</td>
</tr>
<tr>
<td>The heart beat of a plant is very slow but when a grain of caffeine is added the heart beat becomes fast exactly like it affects the heart of the animal.</td>
<td>Tea/coffee</td>
</tr>
</tbody>
</table>

After the students have filled in his connection list he is instructed "Write a short paragraph showing
When we see a dying animal, we are affected because we can see the animal suffering, but in the case of plants, we cannot see its suffering so we are not pained at all. But, nevertheless, the death of the plant is also very painful. Sensitive people who have converted to vegetarianism be well-advised, if they do not want their menu to be further reduced, to keep away from Bose institute.

After watching the murder of the plant they will go on a mineral diet and stop eating even plants. The author writes that those who eat meat are cannibals, but he says that since plants have been proved by Bose to have life, what would you say about vegetarians? They are also cannibals. The last hope of those who believe in Ahimsa would be to eat metals. But even that has been proved to be responding to stimuli, are subject to fatigue. Then there is no hope for the believers in Ahimsa.

A Sample Response
Each body cell is an individual. It may not look like to the naked eye but that’s how it looks under a microscope. The muscles are like every leaf in a plant, they have to work to grow and become strong. They need food to get the energy to work. The heart is the nucleus of the plant, which decides how much of expansion is needed. The whole of the body is affected by anesthesia which makes body lose its sensation, in the same way, the chloroform makes the body of the plant less stimulant. Just like tea and coffee stimulates our body, plants can also be stimulated. When there is a disease in the body, the body at times succumbs to death. When the plants develop spots on the leaf it may lead the tree to become hollow in its trunk and thus the tree may fall to ground which is the death of the plant.

Non fit
The pain and sufferings of human beings can be seen by observing the face the eyes and the body. One can say that one looks sick today. In the case of plants one cannot say the same thing. Human beings can go to the doctor and express and say that he feels sick but the plants cannot say, however sick it may be.

The students are told, "Now think of your own analogue. If it does not fit in, pick another one. Remember
analogues never fit exactly, they are just a way of thinking.

Your analogue

<table>
<thead>
<tr>
<th>Fan</th>
<th>Plant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blades of the fan</td>
<td></td>
</tr>
<tr>
<td>Power</td>
<td></td>
</tr>
<tr>
<td>Change of parts</td>
<td></td>
</tr>
<tr>
<td>High voltage</td>
<td></td>
</tr>
<tr>
<td>Fan goes off.</td>
<td></td>
</tr>
</tbody>
</table>

A sample response.

The plant grows vertically and horizontally, it gives shade to the people which cools them, the fan's blades move round and round and give cooling to the people.

Plant has feelings, it has natural colours, it bears fruits, The fan cannot feel, it does not have natural colours and it cannot bear fruits.

Finally, the teacher tells the students that perhaps "J. C. Bose" the lesson in the text book was also written using the same technique.