APPENDIX - A

LIST OF SCHOOLS INCLUDED IN THE STUDY

A. URBAN PRIVATE SCHOOLS
1. Acdils H.S.
2. A.J. de. Almeida H.S, Ponda
3. St. Andrews Institute, Vasco
4. Bhatikar Model H.S, Margao
5. Deepvihar H.S, Vasco
6. Gardian Agnel H.S, Saverdem
7. Mustifund H.S, Panaji
8. Rosary H.S, Miramar
9. Saraswath Vidyalaya, Mapusa

B. RURAL PRIVATE SCHOOLS
10. Abhinav Vidyamandir, Molem
12. Chandranath Education Society's H.S, Assolda
13. Ideal H.S, Piligao
14. St. Lawrence H.S, Agassaim
15. M.I.B.K. H.S, Khandepar
16. Peoples H.S, Camaurlim
17. Saviour of the World H.S, Loutolim
18. Sreeram H.S, Khadki

C. URBAN GOVERNMENT SCHOOLS
19. Government H.S, Dona paula
20. Government H.S, Ponda
22. Government H.S, Vasco Main

D. RURAL GOVERNMENT SCHOOLS
23. Government H.S, Amona
24. Government H.S, Dhavisherem
25. Government H.S, Guleli
27. Government H.S, Kundaim
Directions

This booklet contains five types of tests designed to find out how well you are able to reason analytically and logically. Each test has separate directions that should be read carefully.

Do not turn this page until instructed to do so.

Do not make any marks in this test booklet.

All answers are to be marked on the separate answer sheet provided. Use a sharp No. 2 pencil to mark your answers. If you wish to change an answer, be sure to erase your old answer completely.
TEST 1: INFERENCE

DIRECTIONS

An inference is a conclusion a person can draw from certain observed or supposed facts. For example, if the lights are on in a house and music can be heard coming from the house, a person might infer that someone is at home. But this inference may or may not be correct. Possibly the people in the house did not turn the lights and the radio off when they left the house.

In this test, each exercise begins with a statement of facts that you are to regard as true. After each statement of facts you will find several possible inferences—that is, conclusions that some persons might draw from the stated facts. Examine each inference separately and make a decision as to its degree of truth or falsity.

For each inference you will find spaces on the answer sheet labeled T, PT, ID, PF, and F. For each inference make a mark on the answer sheet under the appropriate heading as follows:

T if you think the inference is definitely true; that it properly follows beyond a reasonable doubt from the statement of facts given.

PT if, in the light of the facts given, you think the inference is probably true; that it is more likely to be true than false.

ID if you decide that there are insufficient data; that you cannot tell from the facts given whether the inference is likely to be true or false; if the facts provide no basis for judging one way or the other.

PF if, in the light of the facts given, you think the inference is probably false; that it is more likely to be false than true.

F if you think the inference is definitely false; that it is wrong, either because it misinterprets the facts given, or because it contradicts the facts or necessary inferences from those facts.

Sometimes, in deciding whether an inference is probably true or probably false, you will have to use certain commonly accepted knowledge or information that practically every person has. This will be illustrated in the example that follows.

Look at the example in the next column; the correct answers are indicated in the block at the right.

In the above example, inference 1 is probably true (PT) because (as is common knowledge) most people in their early teens do not show so much serious concern with broad social problems. It cannot be considered definitely true from the facts given because these facts do not tell how much concern other young teenagers may have. It is also possible that some of the students volunteered to attend mainly because they wanted a weekend outing.

Inference 2 is probably false (PF) because the students' growing awareness of these topics probably stemmed at least in part from discussions with teachers and classmates.

There is no evidence for inference 3. Thus, there are insufficient data (ID) for making a judgment on the matter.

Inference 4 is definitely false (F) because it is given in the statement of facts that the topics of race relations and means of achieving world peace were the problems chosen for discussion.

Inference 5 necessarily follows from the given facts; it therefore is true (T).

In the exercises that follow, more than one of the inferences from a given statement of facts may be true (T), or false (F), or probably true (PT), or probably false (PF), or have insufficient data (ID) to warrant any conclusion. Thus, you are to judge each inference independently.

Make a heavy black mark in the space under the heading that you think best describes each inference. If you change an answer, erase it thoroughly. Make no extra marks on the answer sheet.

Go on to the next page »
EXERCISES

In 1946 the United States Armed Forces conducted an experiment called "Operation Snowdrop" to find out what kinds of military personnel seemed to function best under severe arctic climatic conditions. Some of the factors examined were weight, age, blood pressure, and national origin. All of the participants in "Operation Snowdrop" were given a training course in how to survive and function in extreme cold. At the conclusion of the experiment, it was found that only two factors among those studied distinguished between personnel whose performance was rated as "effective" and those rated as "not effective" on the arctic exercises. These factors were: (1) desire to participate in the experiment, and (2) degree of knowledge and skill regarding how to live and protect oneself under arctic conditions.

1. Despite the training course given to all of the participants in "Operation Snowdrop," some participants exhibited greater arctic survival knowledge or skill than others.

2. It was believed by the Armed Forces that military operations might someday be carried out in an arctic-like environment.

3. A majority of the personnel who participated in "Operation Snowdrop" thoroughly disliked the experience.

4. Participants having normal weight and blood pressure were rated as significantly more effective on the arctic exercises than were the other participants.

Some time ago a crowd gathered in Middletown to hear the new president of the local Chamber of Commerce speak. The president said, "I am not asking, but demanding, that labor unions now accept their full share of responsibility for civic improvement and community welfare. I am not asking, but demanding, that they join the Chamber of Commerce." The members of the Central Labor Unions who were present applauded enthusiastically. Three months later all the labor unions in Middletown were represented in the Chamber of Commerce. These representatives worked with representatives of other groups on committees, spoke their minds, participated actively in the civic improvement projects, and helped the Chamber reach the goals set in connection with those projects.

5. Both the labor union representatives and the other members of the committees came to a better recognition of one another's viewpoints through their Chamber of Commerce contacts.

6. Union participation in the Middletown Chamber of Commerce greatly reduced worker-management disputes in that town.

7. Most of the union representatives regretted having accepted the invitation to participate in the Chamber of Commerce.
TEST 2: RECOGNITION OF ASSUMPTIONS

DIRECTIONS

An assumption is something presupposed or taken for granted. When you say, "I'll graduate in June," you take for granted or assume that you will be alive in June, that your school will judge you to be eligible for graduation in June, and similar things.

Below are a number of statements. Each statement is followed by several proposed assumptions. You are to decide for each assumption whether a person, in making the given statement, is really making that assumption—that is, taking it for granted, justifiably or not.

If you think that the given assumption is taken for granted in the statement, make a heavy black mark under "ASSUMPTION MADE" in the proper place on the answer sheet. If you think the assumption is not necessarily taken for granted in the statement, blacken the space under "ASSUMPTION NOT MADE." Remember to judge each assumption independently.

Below is an example. The block at right shows how these items should be marked on the answer sheet.

EXAMPLE
Statement: "We need to save time in getting there so we'd better go by plane."

Proposed Assumptions:
1. Going by plane will take less time than going by some other means of transportation. (It is assumed in the statement that the greater speed of a plane over the speeds of other means of transportation will enable the group to reach its destination in less time.)
2. There is plane service available to us for at least part of the distance to the destination. (This is necessarily assumed in the statement since, in order to save time by plane, it must be possible to go by plane.)
3. Travel by plane is more convenient than travel by train. (This assumption is not made in the statement—the statement has nothing to do with saving time, and says nothing about convenience or about any other specific mode of travel.)

EXERCISES

Statement: "Zenith is the city to move to—it has the lowest taxes."

Proposed assumptions:
8. Lower taxes imply efficient city management.
9. In deciding where to live, it is important to avoid high taxes.
10. The majority of the residents in Zenith are content with their present city government.

Statement: "I'm traveling to South America. I want to be sure that I do not get typhoid fever, so I shall go to my physician and get vaccinated against typhoid fever before I begin my trip."

Proposed assumptions:
11. If I don't take the injection, I shall become ill with the fever.
12. By getting vaccinated against typhoid fever, I decrease the chances that I will get the disease.
13. Typhoid fever is more common in South America than it is where I live.

Statement: "If war is inevitable, we'd better launch a preventive war now while we have the advantage."

Proposed assumptions:
14. If we fight now, we are more likely to win than we would be if forced to fight later.
15. If we don't launch a preventive war now, we'll lose any war that may be started by an enemy later.
TEST 3: DEDUCTION

DIRECTIONS

In this test, each exercise consists of several statements (premises) followed by several suggested conclusions. For the purposes of this test, consider the statements in each exercise as true without exception. Read the first conclusion beneath the statements. If you think it necessarily follows from the statements given, make a heavy black mark under “CONCLUSION FOLLOWS” in the proper place on the answer sheet. If you think it is not a necessary conclusion from the statements given, put a heavy black mark under “CONCLUSION DOES NOT FOLLOW,” even though you may believe it to be true from your general knowledge.

Likewise, read and judge each of the other conclusions. Try not to let your prejudices influence your judgment—just stick to the given statements (premises) and judge each conclusion as to whether it necessarily follows from them.

The word “some” in any of these statements means an indefinite part or quantity of a class of things. “Some” means at least a portion, and perhaps all of the class. Thus, “some holidays are rainy” means at least one, possibly more than one, and perhaps even all holidays are rainy.

Study the example carefully before starting the test.

EXERCISES

No person who thinks scientifically places any faith in the predictions of astrologers. Nevertheless, there are many people who rely on horoscopes provided by astrologers. Therefore —

16. People who lack confidence in horoscopes think scientifically.
17. Many people do not think scientifically.

All members of symphony orchestras enjoy playing classical music. All members of symphony orchestras spend long hours practicing. Therefore —

18. Musicians who play classical music do not mind spending long hours practicing.
19. Some musicians who spend long hours practicing enjoy playing classical music.

Rice and celery must have a good deal of moisture in order to grow well, but rye and cotton grow best where it is relatively dry. Rice and cotton grow where it is hot, and celery and rye where it is cool. In Timbuktu, it is very hot and damp. Therefore —

20. Neither the temperature nor the moisture conditions in Timbuktu are favorable for growing a celery crop.
21. The temperature and moisture conditions in Timbuktu are more favorable for growing rice than for growing celery, cotton, or rye.
22. Conditions in Timbuktu are not altogether favorable for growing a cotton or a rye crop.

Most persons who attempt to break their smoking habit find that it is something that they can accomplish only with difficulty, or cannot accomplish at all. Nevertheless, there is a growing number of individuals whose strong desire to stop smoking has enabled them to break the habit permanently. Therefore —

23. Only smokers who strongly desire to stop smoking will succeed in doing so.
24. A strong desire to stop smoking helps some people to permanently break the habit.
TEST 4: INTERPRETATION

DIRECTIONS

Each exercise below consists of a short paragraph followed by several suggested conclusions. For the purpose of this test, assume that everything in the short paragraph is true. The problem is to judge whether or not each of the proposed conclusions logically follows beyond a reasonable doubt from the information given in the paragraph.

If you think that the proposed conclusion follows beyond a reasonable doubt (even though it may not follow absolutely and necessarily), then make a heavy black mark under "CONCLUSION FOLLOWS" in the proper place on the answer sheet. If you think that the conclusion does not follow beyond a reasonable doubt from the facts given, then blacken the space under "CONCLUSION DOES NOT FOLLOW." Remember to judge each conclusion independently.

Look at the example below; the block at the right shows how the answers should be marked on the answer sheet.

EXAMPLE

A study of vocabulary growth in children from eight months to six years old shows that the size of spoken vocabulary increases from zero words at age eight months to 2562 words at age six years.

1. None of the children in this study had learned to talk by the age of six months. (The conclusion follows beyond a reasonable doubt since, according to the statement, the size of the spoken vocabulary at eight months was zero words.)

2. Vocabulary growth is slowest during the period when children are learning to walk. (The conclusion does not follow since there is no information given that relates growth of vocabulary to walking.)

EXERCISES

When the United States Steel Corporation was created in 1902, it was the largest corporation America had known up to that time. It produced twice as much steel as all of its domestic competitors put together. Today, the United States Steel Corporation produces about 20 percent of the steel that is made in this country.

25. In 1902, the United States Steel Corporation produced not less than 66 percent of the total domestic output of steel.

26. Today, domestic competitors produce more than three times as much steel as does the United States Steel Corporation.

27. The United States Steel Corporation produces less steel today than it did in 1902.

Pat had poor posture, had very few friends, was ill at ease in company, and in general was very unhappy. Then, a close friend recommended that Pat visit Dr. Baldwin, a reputed expert on helping people improve their personalities. Pat took this recommendation and, after three months of treatment by Dr. Baldwin, developed more friendships, was more at ease, and in general felt happier.

28. Without Dr. Baldwin's treatment, Pat would not have improved.

29. Without a friend's advice, Pat would not have heard of Dr. Baldwin.

When I go to bed at night, I usually fall asleep quite promptly. But about twice a month I drink coffee during the evening, and whenever I do, I lie awake and toss for hours.

30. My problem is mostly psychological; I expect that the coffee will keep me awake and therefore it does.

31. On nights when I want to fall asleep promptly, I'd better not drink coffee in the evening.

Go on to the next page
TEST 5: EVALUATION OF ARGUMENTS

DIRECTIONS

In making decisions about important questions, it is desirable to be able to distinguish between arguments that are strong and arguments that are weak, as far as the question at issue is concerned. For an argument to be strong, it must be both important and directly related to the question.

An argument is weak if it is not directly related to the question (even though it may be of great general importance), or if it is of minor importance, or if it is related only to trivial aspects of the question.

Below is a series of questions. Each question is followed by several arguments. For the purpose of this test, you are to regard each argument as true. The problem then is to decide whether it is a strong or a weak argument.

Make a heavy black mark on the answer sheet under "ARGUMENT STRONG" if you think the argument is strong, or under "ARGUMENT WEAK" if you think the argument is weak. Judge each argument separately on its own merit. Try not to let your personal attitude toward the question influence your evaluation of the argument, since each argument is to be regarded as true.

In the example, note that the argument is evaluated as to how well it supports the side of the question indicated.

EXERCISES

Should all young men in the United States go to college?

1. Yes; college provides an opportunity for them to learn school songs and cheers. (This would be a silly reason for spending years in college.)

2. No; a large percent of young men do not have enough ability or interest to derive any benefit from college training. (If this is true, as the directions require us to assume, it is a weighty argument against all young men going to college.)

3. No; excessive studying permanently warps an individual's personality. (This argument, although of great general importance, is not directly related to the question, because attendance at college does not necessarily require excessive studying.)

When the word "should" is used as the first word in any of the following questions, its meaning is, "Would the proposed action promote the general welfare of the people in the United States?"

Should groups in this country who are opposed to some of our government's policies be permitted unrestricted freedom of press and speech?

32. Yes; a democratic state thrives on free and unrestricted discussion, including criticism.

33. No; the countries opposed to our form of government do not permit the free expression of our points of view in their territories.

Should the United States Department of Defense keep the public informed of its anticipated scientific research programs by publicizing ahead of time the needs that would be served by each program?

34. No; some become critical of the government when widely publicized projects turn out unsuccessfully.

35. Yes; only a public so informed will support vital research and development activities with its tax dollars.

Do juries decide court cases fairly when one of the opposing parties is rich and the other is poor?

36. No; because rich people are more likely to settle their cases out of court.

37. No; most jurors are more sympathetic to poor people than to the rich, and the jurors' sympathies affect their findings.

38. No; because rich people can afford to hire better lawyers than poor people, and juries are influenced by the skill of the opposing lawyers.

Should pupils be excused from public schools to receive religious instruction in their own churches during school hours?

39. No; having public school children go off to their separate churches during school hours would seriously interfere with the educational process and create friction among children of different religions.

40. No; religious instruction during school hours would violate our constitutional separation of church and state; those who desire such instruction are free to get it after school hours.

STOP.

You may go back and check your work.
Watson - Glaser Critical Thinking Appraisal (WGCTA)

**Answer Sheet / उत्तर पत्रिका**

**DO NOT WRITE ON THIS ANSWER SHEET UNTIL YOU ARE TOLD TO DO SO.**

- Use a pencil Only.
- Darken the circle completely.
- Erase Clearly any marks you wish to change.
- Do not make any stray mark on this Form.
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**Your Name:** ____________________________

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<th>TEST 2: RECOGNITION OF ASSUMPTIONS / मान्यता</th>
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**APPENDIX C**

**Test of “g”: Culture Fair**

**SCALE 3, FORM A**

Prepared by R. B. Cattell and A. K. S. Cattell

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Name of School (or Address)

Today's Date

Grade (or Class)

Date of Birth

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Total Score

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*Do not fill this page until told to do so.*

1963 Edition

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End of Test 4
TEST 1 Examples:

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Examples:

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Stop Here. Do Not Go On To Next Test
Until Told To Do So.
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TEST 2 Examples:

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Examples:

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Stop Here.
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TEST 3 Examples:

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Examples:

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Stop Here.
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INSTRUCTIONS: Put a cross (X) in the box corresponding to the answer you choose as correct in the test booklet.
## APPENDIX D

### 35 Dimensions of Critical Thinking

#### A Rating Scale

<table>
<thead>
<tr>
<th>Name:</th>
<th>Designation:</th>
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<tbody>
<tr>
<td>Institution:</td>
<td>Date:</td>
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</table>

**Direction:** Given below are a set of 35 dimensions of Critical Thinking that should ideally be developed in the classroom. Constraints in terms of time, syllabus coverage, nature of curriculum, students and teachers potential, infrastructure facilities etc., exist in our schools. Keeping all this in view, which dimensions do you feel could the teachers develop among the secondary school children in Goa, and to what extent? (You are not to rate keeping in mind what is happening but what is possible)

Under each dimension of Critical Thinking certain teacher behaviours are specified. These behaviours together contribute to the development of corresponding dimensions of Critical Thinking. Taking the help of these teacher behaviours please rate each of the 35 dimensions, by entering the appropriate number out of the five numbers (representing degrees of attainability) given against each dimension using the scale given below.

<table>
<thead>
<tr>
<th>Rating</th>
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<tbody>
<tr>
<td>1 - Not at all</td>
</tr>
<tr>
<td>2 - Hardly</td>
</tr>
<tr>
<td>3 - To some extent</td>
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<tr>
<td>4 - To a great extent</td>
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<tr>
<td>5 - Very much</td>
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</table>

### 35 Dimensions of Critical Thinking

With corresponding teacher behaviours

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Rating</th>
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<tbody>
<tr>
<td>1. Thinking Independently</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>o Encouraging students to gather and assemble information</td>
<td></td>
</tr>
<tr>
<td>o Facilitating the use of knowledge, skills and insights by the students.</td>
<td></td>
</tr>
<tr>
<td>o Asking students to find solution to problems on their own</td>
<td></td>
</tr>
<tr>
<td>o Encouraging students to brainstorm ideas</td>
<td></td>
</tr>
<tr>
<td>o Asking students to form categories and classify information</td>
<td></td>
</tr>
<tr>
<td>o Asking students to draw and evaluate conclusions</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Developing Insight into Ego centricity or Socio Centricity</th>
<th>1 2 3 4 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>o Facilitating discussion of egocentric (I am 100% right) or Socio centric (we are 100% right) thought</td>
<td></td>
</tr>
<tr>
<td>o Encouraging students to listen carefully and open-mindedly to those with whom they disagree</td>
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</tbody>
</table>
3. Exercising Fairmindedness

- Asking students to state one another's position when disputes arise
- Giving students opportunities to correct any misunderstanding of their positions
- Asking students to explain why their fellow students see an issue differently
- Asking students for evidence and reason for what they agree and disagree on
- Asking students to consider positions from others' point of view
- Asking students to compare and evaluate different points of view
- Asking questions like:
  - Why do people choose to do things differently?
  - Why do some people think their ways are best?

4. Exploring Thoughts Underlying Feelings and Feelings Underlying Thoughts.

- Helping students to realize the intimate connections between thought and feeling/reason and emotion
- Helping students to understand their feelings and emotions in relation to their thoughts, ideas and interpretations.
- Asking students to consider what a person might be thinking while experiencing a particular feeling in a particular situation
- Asking students to discuss various reasons for resistance to change
- Asking students to generalize about thought behind various emotions.
- Asking questions like:
  - How did you come to feel this way?
  - Why do you feel this way?
  - How is he interpreting his situation?
  - What led him to that conclusion?
  - Would you have felt the same if you had been in his position?

5. Developing Intellectual Humility and Suspending Judgments

- Modelling intellectual humility by demonstrating a willingness to admit limits of his/her own knowledge.
- Using phrases like "I believe", "I am pretty sure", "I doubt", "I suspect", "perhaps", "it seems" etc.
- Helping students to distinguish what they know from what they don't know
- Making students suspend judgment until they find out the relevant information
- Encouraging students to explain what they would need to learn in order to be more certain
6. Developing Intellectual Courage
   - Encouraging students to honestly consider or doubt any belief
   - Giving support to students who disagree with or doubt their peers or texts
   - Raising probing questions regarding unpopular ideas
   - Asking questions like:
     - Why is it hard to go against popular beliefs?
     - If everyone around you is sure of something, why is it hard to question or disagree?
     - Is it hard to question your own beliefs? why?
   - Modelling intellectual courage by arguing against popular ideas
   - Encouraging students to admit the truth in some ideas considered dangerous and absurd.

7. Developing Intellectual Good Faith or Integrity
   - Encouraging students to hold themselves to the same rigorous standards of evidence and proof to which they hold others
   - Encouraging students to practice what they advocate for others
   - Encouraging students to honestly admit discrepancies and inconsistencies in their own thought and action
   - Sensitive to his own inconsistencies in the application of rules and standards
   - Asking students to evaluate themselves and others using the same criteria.
   - Asking questions like:
     - When have you found it difficult to listen to others?
     - Why are people often unfair?
     - Would you have done otherwise? Would it have been easy? Why or Why not?

8. Developing Intellectual Perseverance
   - Raising difficult problems /issues again and again over the course of the year
   - Helping students to break a complex problem into simple components
   - Making students understand that getting answers is not the only form of progress but having better and clearer questions is also progress
   - Sympathizing with students' natural frustration and discouragement
   - Encouraging students to discuss the importance of sufficient thought regarding significant decisions and beliefs.

9. Developing confidence in Reason
   - Assisting students to solve a problem with the use of their own thinking
   - Thinking aloud on a problem infront of the students
   - Encouraging students to question the reasons behind rules, activities and procedures
   - Displaying a patient willingness to hear their reasons for their beliefs and actions
   - Clarifying the standards of good reasoning and help them to grasp why this standard makes sense
   - Making rules, assignments and classroom activities intelligible to students based on valid reasons
   - Giving students multiple opportunities to try to persuade each other and the teacher
   - Helping students feel that knowledge and reason are within their grasp
10. Refining Generalizations and Avoiding Oversimplifications

- Asking for counter examples when students or text over-generalizes
- Raising questions about various possible contributing factors for problem, event or situation
- Bringing various points of view to a given issue
- Probing into the connection of interconnected or overlapping phenomena
- Encouraging students to qualify their statements when they have insufficient evidence to be certain
- Making distinction between useful simplification and misleading oversimplification
- Discouraging "all good" or "all bad" and "all right" or "all wrong" attitudes among students

11. Comparing Analogous Situations: Transferring Insights to New Contexts

- Encouraging students to apply what they have just learned to different but analogous context
- Using similar information from different situations
- Asking students to name or find analogous situation
- Asking students to apply scientific laws/principles/concepts to situations not mentioned in the text.

12. Developing One's Perspective: Creating or Exploring Beliefs, Arguments or Theories

- Asking students to consider ideas from others point of view
- Asking students to compare what they say and believe, with how they act
- Asking students to explain, how what they have learned changed their thinking
- Giving time to students to reflect and arrive at tentative conclusions
- Giving opportunity for a student to explore an idea in depth
- Giving students occasions to name and describe their points of view and ways of thinking

13. Clarifying Issues, Conclusions, or Beliefs

- Asking students to slow down and reflect before coming to conclusions
- Asking questions like:
  - Is the issue clear?
  - What do you need to settle it?
  - What should some one who disagrees with you say?
- Encouraging for reformulation of issues in the light of new information.
- Helping students to distinguish facts from interpretation and opinions
- Making students ask themselves the following questions to clarify an issue
  - Do I understand the issue?
  - Do I know how to settle it?
  - Have I stated it fairly?
  - Are the words clear?
  - What facts are relevant?
  - Do I have to analyze any concept?
  - Am I evaluating anything?
- Encouraging students to settle questions only after they have developed a clear formulation of the issue
14. Clarifying and Analysing the Meanings of Words or Phrases
- Encouraging paraphrasing of new words or phrases
- Supplying a range of examples allowing students to add to the list
- Using analogies
- Asking for clear examples of concepts and examples of its opposite
- Discussing the implications of the concept and its opposite
- Distinguishing associations which are logically related to the concept, from those which are not
- Having the class brainstorm ideas associated with the term under discussion

15. Developing Criteria for Evaluation: Clarifying Values and Standards
- Asking students the purpose and criteria of evaluation
- Asking students to consider different points of view when attempting to evaluate something
- Encouraging students to develop clear criteria for evaluation and apply them consistently
- Asking questions like:
  - What are we evaluating? Why?
  - Can we generalize and list criteria?
  - Can we describe what to look for when judging an x?
  - What features does an 'x' need to have? Why?
- Asking students to continually evaluate written materials and discuss their criteria

16. Evaluating the Credibility of Sources of Information
- Encouraging students to check a variety of sources supporting different points of view
- Discussing the relevance of a source's past dependability
- Asking questions like:
  - Is this person in a position to know?
  - What would someone need to be in a position to know?
  - Was this person there?
  - What do we know about this person's expertise and experience?
  - Where did he get this information?
  - Is there reason to doubt him?
- Encouraging students to recognize the ways in which their own motivation affect their interpretation and description of events.

17. Questioning Deeply: Raising and pursuing Root of Significant Questions
- Raising general and subject-specific basic questions repeatedly and discussing at length.
- Encouraging students to raise and discuss important issues underlying the object of study
- Asking students to draw conclusions of their own
- Asking students to form categories of their own
- Encouraging students to raise thought-provoking issues
- Discussing the purpose, importance, or values of rules, institutions, activities and ideals.
18. **Analysing or Evaluating Arguments, Interpretations, Beliefs or Theories**
- Encouraging to place competing arguments, interpretations or theories in opposition to one another.
- Encouraging to argue back and forth, and modify their positions in the light of the strengths of others' positions.
- Asking the students to make their assumptions explicit and evaluate them.
- Encouraging students to develop their own theories and compare them with those given in the text.

19. **Generating or Assessing Solutions**
- Making the students state the problem.
- Asking the students to explore at length the causes of a problem.
- Encouraging students to explore and evaluate multiple perspectives to a given problem.
- Asking questions like:
  - Does this solve the problem?
  - What other solutions can you think of?
  - What are the criteria for judging solutions in this case?
  - How do the solutions compare with each other?
  - If this fact about the situation were different, would it change our choice of solution? Why? or Why not?
- Encouraging students to explore the beliefs underlying various choices of solutions.
- Giving problem-solving experiences in the class.
- Asking students to evaluate solutions given in the text.

20. **Analysing or Evaluating Actions and Policies**
- Encouraging to raise ethical questions about actions and policies of themselves and others.
- Asking questions like:
  - Why did 'x' do this?
  - What reasons were given?
  - Were those real reasons?
  - Why do you think so?
  - What are the probable causes of these actions?
  - Do you think the action was fair? Why? or why not?
- Encouraging students to evaluate the behavior of important people of the past.

21. **Reading Critically: Clarifying or Critiquing Texts**
- Encouraging students to raise questions about the materials they read.
- Asking questions like:
  - What does this passage say? What does it imply?
  - Does it contradict anything you know?
  - What might some one who disagrees with it say?
  - Does the text leave out relevant information?
  - Does it favour one perspective?
- Encouraging students to continually evaluate what they read.
- Asking students to evaluate unit, chapter, sections, titles and headings in their texts in the light of the following points.
22. Listening Critically: The Art of Silent Dialogue
- Modelling critical listening by actively and constructively listening to students' response
- Encouraging students to listen to one another by asking questions like:
  - 'x', did you follow what 'y' said?
  - Could you put in your words what 'y' said?
  - Z, could you give us an example from your own experience of what 'y' has said?
- Encouraging students to ask questions like:
  - Why does he say that?
  - Give an example to illustrate that point?
  - Is s (he) using this word as I would, or somewhat differently?
  - What is the main point?
- Encouraging students to ask key questions that enable him to locate himself in the thought of another.

23. Making Interdisciplinary Connections
- Examining a topic from the perspectives of several other subjects
- Encouraging students to compare how data is gathered and used in different subjects
- Encouraging students to use relevant concepts, knowledge and insights from many subjects to analyse an issue.

24. Practising Socratic Discussion: Clarifying and questioning Beliefs, Theories or perspectives
- Encouraging students to question each other and themselves
- Expressing wonder about the reasoning behind students beliefs
- Eliciting students' thoughts and probing deep into them.
- Asking questions like:
  - Why?
  - If that is so what follows?
  - Are you assuming that?
  - How do you know that?
  - Is this an example of what you meant? or is that?
  - Can I summarize your point as _____________________
  - What is your reason for saying so? ________________

25. Reasoning Dialogically: Comparing perspectives, Interpretations or theories
- Raising root questions and root ideas for the expression of multiple points of view
- Encouraging students to explore, how what they think about 'x' relate to what they think about 'y' and 'z'.
- Making students move back and forth between points of view like:
  - Basic idea of one student with another / others
- Their own ideas and the ideas expressed in books
- Their thinking and their experience

26. **Reasoning dialectically : Evaluating Perspectives**

Interpretations or Theories

- Having proponents of conflicting views, argue their positions and have others evaluate
- Organising debate / discussion sessions in the classroom teaching.
- Asking questions like:
  - Was the reason a good one? Why or why not?
  - To what evidence does each side appeal?
  - Is the evidence from both sides relevant?
  - How can we know which of these conflicting assumptions is best?

27. **Comparing and contrasting ideals with actual practice**

- Asking questions like:
  - Is this a fact or an ideal?
  - Are things always this way?
  - Is this statement an expression of what people are trying to achieve?
  - Are these ideals yours? Why or why not?
  - How have people attempted to achieve this idea?
  - When did they not meet the ideal? Why?
- Facilitating general discussion of the value of achieving consistency of thought and action
- Ask questions like:
  - Have you ever thought something was true, about yourself but acted in a way that was inconsistent with your ideal?
  - Did you see yourself differently?
  - Did you make effort to change your behaviour?
  - Why is it hard to be honest about yourself and the group you belong to?

28. **Thinking precisely about thinking : Using critical Vocabulary**

- Making critical terms (infer, justify, conclude etc.) part of their working vocabulary.
- Speaking in pairs of sentences: First using the critical vocabulary, then rephrasing the sentence without the new terms
- Rephrasing students statement to incorporate the critical vocabulary.

29. **Noting significant similarities and differences**

- Encouraging students to distinguish between different meanings of the same word or phrase and recognise the different implications of each
- Asking students to compare and contrast two or more ideas, phenomena etc.
- Distinguishing general concepts from scientific concepts, e.g. work, energy
- Encouraging students to distinguish ideas by discussing the different applications and implications of the concepts

30. **Examining or evaluating assumptions**

- Encouraging students to make assumption explicit
- Asking questions that elicit the implicit elements of students claim
255

- Asking questions like: If this was evidence, and this is the conclusion - What was assumed?
- Encouraging students to question and discuss any assumption they suspect.
- Asking questions like:  
  - Why do people make this assumption?  
  - Have you ever made this assumption?  
  - What could be assumed instead?  
  - Is this belief always true? Some times true? Always false?

31. Distinguishing relevant from irrelevant facts
- Asking students to limit their remarks to facts which are relevant to the issue
- Helping students to see when their remarks are irrelevant
- Asking students to read text with one or more issues in mind noting relevant details
- Encouraging students to discuss the relevant details noted from the text
- Changing issue slightly and have students compare what was relevant to the first issue to what is relevant to be the second

32. Making plausible inferences, predictions or interpretations
- Ask to make inferences based on a wide variety of statements and action
- Encourage the class to discuss and evaluate the inferences made by group
- Helping students to distinguish observations from inferences and sound inferences from unsound ones
- Asking students to give examples from their experiences of inferring incorrectly.

33. Evaluating evidence and alleged facts.
- Asking for reasons of their conclusions like:  
  - How do you know?  
  - Why do you think so?  
  - What evidence do you have?
- Asking probing questions to elicit fuller explanations
- Asking questions like:  
  - On what evidence is the conclusion based?  
  - Where did you get the evidence?  
  - Is the source reliable?  
  - How could we find out what other evidence exists?  
  - What evidences are available for opposing these views?  
  - Is / are the evidence/s sufficient?

34. Recognising Contradictions.
- Encouraging Students to practice recognising contradictions
- Asking questions like:  
  - What does x say? What does y say?  
  - Could both claim to be true? Why or why not?  
- If one is true, must the other be false?  
  - Is this behaviour consistent with these beliefs or values?  
  - Where exactly do these views contradict each other? On what do they agree?
Encouraging students to find points of agreement and specify points of contradiction
Exploring possible ways to reconcile apparent contradictions
Asking questions like:
- What did they say? What did they do?
- Why do you say so?
- What behaviour would have been consistent with their words?

Exploring implications and consequences
Asking students to state the implications of material in the text
Asking questions like:
- What does this imply / mean?
- If this is true, what else must be true?
- What were, or would be the consequence of this action, policy or solution?
- Are the consequences desirable?
Suggesting changes and ask for consequences of changes
Encouraging to explore the implications and consequences of their own beliefs
APPENDIX E

Critical Thinking Teaching Behaviour Inventory (CTTBI)

Guide : Dr. G. C. Pradhan
Investigator : Pally M. U.

Name of the Institution : __________________________ Educational Qualification : __________________________

Subjects you teach : __________________________

Teaching Experience (in years only) : __________ Gender : Male / Female : __________ Date : __________

Direction : Given below are a set of Teacher Behaviours (in statement form) which contribute to the
development of critical thinking in students. Constraints in terms of time, syllabus coverage, nature of curriculum,
infrastructure facilities etc., exist in our schools. Keeping all this in view, please rate to what extent you are able
to incorporate each of the teacher behaviours.

Each statement is followed by five responses: kindly go through each statement and give your response by
ENCIRCLING the appropriate number (out of the five numbers given against each statement) using the scale given
below.

<table>
<thead>
<tr>
<th>1 - Not at all</th>
<th>2 - Hardly</th>
<th>3 - Sometimes</th>
<th>4 - Often</th>
<th>5 - Very often</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Teacher Behaviours</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I encourage students to gather and assemble information</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>2. I facilitate the use of knowledge, skills and insights by the students.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>3. I ask students to find solution to problems on their own</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>4. I encourage students to brainstorm ideas</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>5. I ask students to form categories and classify information</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>6. I ask students to draw and evaluate conclusions</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>7. I ask students to state one another's position when disputes arise</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>8. I give students opportunities to correct any misunderstanding of their positions</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>9. I ask students to explain why their fellow students see an issue differently</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td></td>
<td>Rating</td>
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<td>---</td>
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</tr>
<tr>
<td>10.</td>
<td>I ask students for evidence and reason for what they agree and disagree on</td>
</tr>
<tr>
<td>11.</td>
<td>I ask students to consider positions from others point of view</td>
</tr>
<tr>
<td>12.</td>
<td>I ask students to compare and evaluate different points of view</td>
</tr>
<tr>
<td>13.</td>
<td>I ask questions like: - Why do people choose to do things differently? - Why do some people think their ways are best?</td>
</tr>
<tr>
<td>14.</td>
<td>I model intellectual humility by demonstrating a willingness to admit limits of my own knowledge.</td>
</tr>
<tr>
<td>15.</td>
<td>I use phrases like &quot;I believe&quot;, &quot;I am pretty sure&quot;, &quot;I doubt&quot;, &quot;I suspect&quot;, &quot;perhaps&quot;, &quot;it seems&quot; etc.</td>
</tr>
<tr>
<td>16.</td>
<td>I help students to distinguish what they know from what they don't know</td>
</tr>
<tr>
<td>17.</td>
<td>I make students suspend judgment until they find out the relevant information</td>
</tr>
<tr>
<td>18.</td>
<td>I encourage students to explain what they would need to learn in order to be more certain</td>
</tr>
<tr>
<td>19.</td>
<td>I raise difficult problems/issues again and again over the course of the year</td>
</tr>
<tr>
<td>20.</td>
<td>I help students to break complex problems into simple components</td>
</tr>
<tr>
<td>21.</td>
<td>I make students understand that getting answers is not the only form of progress but having better and clearer questions is also progress</td>
</tr>
<tr>
<td>22.</td>
<td>I sympathize with students' natural frustration and discouragement</td>
</tr>
<tr>
<td>23.</td>
<td>I encourage students to discuss the importance of sufficient thought regarding significant decisions and beliefs.</td>
</tr>
<tr>
<td>24.</td>
<td>I assist students to solve a problem with the use of their own thinking</td>
</tr>
<tr>
<td>25.</td>
<td>I think aloud on a problem infront of the students</td>
</tr>
<tr>
<td>26.</td>
<td>I encourage students to question the reasons behind rules, activities and procedures</td>
</tr>
<tr>
<td>27.</td>
<td>I display a patient willingness to hear their reasons for their beliefs and actions</td>
</tr>
<tr>
<td>28.</td>
<td>I clarify the standards of good reasoning and help them to grasp why this standard makes sense</td>
</tr>
<tr>
<td>29.</td>
<td>I make rules, assignments and classroom activities intelligible to students based on valid reasons</td>
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<td></td>
<td>Rating</td>
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</tr>
<tr>
<td></td>
<td>1 - Not at all</td>
</tr>
<tr>
<td>30.</td>
<td>I give students multiple opportunities to try to persuade each other and himself / herself</td>
</tr>
<tr>
<td>31.</td>
<td>I help students feel that knowledge and reason are within their grasp</td>
</tr>
<tr>
<td>32.</td>
<td>I encourage students to apply what they have just learned to different but analogous context</td>
</tr>
<tr>
<td>33.</td>
<td>I use similar information from different situations</td>
</tr>
<tr>
<td>34.</td>
<td>I ask students to name or find analogous situation</td>
</tr>
<tr>
<td>35.</td>
<td>I ask students to apply scientific laws / principles / concepts to situations not mentioned in the text.</td>
</tr>
<tr>
<td>36.</td>
<td>I ask students to compare what they say and believe, with how they act</td>
</tr>
<tr>
<td>37.</td>
<td>I ask students to explain, how what they have learned changed their thinking</td>
</tr>
<tr>
<td>38.</td>
<td>I give time to students to reflect and arrive at tentative conclusions</td>
</tr>
<tr>
<td>39.</td>
<td>I give opportunity for a student to explore an idea in depth</td>
</tr>
<tr>
<td>40.</td>
<td>I give students occasions to name and describe their points of view and ways of thinking</td>
</tr>
<tr>
<td>41.</td>
<td>I ask students to slow down and reflect before coming to conclusions</td>
</tr>
</tbody>
</table>
| 42. | I ask questions like: 
- Is the issue clear? 
- What do you need to settle it? 
- What should some one who disagrees with you say? | 1 | 2 | 3 | 4 | 5 |
| 43. | I encourage reformulation of issues in the light of new information. | 1 | 2 | 3 | 4 | 5 |
| 44. | I help students to distinguish facts from interpretation and opinions | 1 | 2 | 3 | 4 | 5 |
| 45. | I make students ask themselves the following questions to clarify an issue 
- Do I understand the issue? 
- Do I know how to settle it? 
- Have I stated it fairly? 
- Are the words clear? 
- What facts are relevant? 
- Do I have to analyze any concept? 
- Am I evaluating anything? | 1 | 2 | 3 | 4 | 5 |
<p>| 46. | I encourage students to settle questions only after they have developed a clear formulation of the issue | 1 | 2 | 3 | 4 | 5 |
| 47. | I encourage paraphrasing of new words or phrases | 1 | 2 | 3 | 4 | 5 |</p>
<table>
<thead>
<tr>
<th>Pose</th>
<th>Description</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>42.</td>
<td>I supply a range of examples allowing students to add to the list</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>43.</td>
<td>I use analogies</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>50.</td>
<td>I ask for clear examples of concepts and examples of its opposite</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>51.</td>
<td>I discuss the implications of the concept and its opposite</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>52.</td>
<td>I make the students distinguish associations which are logically related to the concept, from those which are not</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>53.</td>
<td>I make the class brainstorm ideas associated with the term under discussion</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>54.</td>
<td>I encourage students to check a variety of sources' supporting different points of view</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>55.</td>
<td>I discuss the relevance of a sources past dependability</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>56.</td>
<td>I ask questions like:</td>
<td>1 2 3 4 5</td>
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<tr>
<td></td>
<td>- Is this person in a position to know?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- What would some one need to be in a position to know?</td>
<td></td>
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<tr>
<td></td>
<td>- Was this person there?</td>
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<tr>
<td></td>
<td>- What do we know about this person's expertise and experience?</td>
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</tr>
<tr>
<td></td>
<td>- Where did he get this information?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Is there reason to doubt him?</td>
<td></td>
</tr>
<tr>
<td>57.</td>
<td>I encourage students to recognise the ways in which their own motivation affect their interpretation and description of events.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>58.</td>
<td>I raise general and subject - specific basic questions repeatedly and discuss at length.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>59.</td>
<td>I encourage students to raise and discuss important issues underlying the object of study</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>60.</td>
<td>I ask students to draw conclusions of their own</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>61.</td>
<td>I ask students to form categories of their own</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>62.</td>
<td>I encourage students to raise thought - provoking issues</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>63.</td>
<td>I discuss the purpose, importance, or values of rules, institutions, activities and ideals.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>64.</td>
<td>I make the students state the problem</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>65.</td>
<td>I ask the students to explore at length the causes of a problem</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>66.</td>
<td>I encourage students to explore and evaluate multiple perspectives to a given problem</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>Rating</td>
<td>1 - Not at all</td>
<td>2 - Hardly</td>
</tr>
<tr>
<td>--------</td>
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</tr>
</tbody>
</table>
| 67. I ask question like:  
  - Does this solve the problem?  
  - What other solutions can you think of?  
  - What are the criteria for judging solutions in this case?  
  - How do the solutions compare with each other?  
  - If this fact about the situation were different, would it change our choice of solution? Why? / Why not? | 1 | 2 | 3 | 4 | 5 |
| 68. I encourage students to explore the beliefs underlying various choices of solutions | 1 | 2 | 3 | 4 | 5 |
| 69. I give problem-solving experiences in the class | 1 | 2 | 3 | 4 | 5 |
| 70. I ask students to evaluate solutions given in the text | 1 | 2 | 3 | 4 | 5 |
| 71. I encourage students to raise questions about the materials they read | 1 | 2 | 3 | 4 | 5 |
| 72. I ask questions like:  
  - What does this passage say? What does it imply?  
  - Does it contradict anything you know?  
  - What might someone who disagrees with it say?  
  - Does the text leave out relevant information?  
  - Does it favour one perspective? | 1 | 2 | 3 | 4 | 5 |
| 73. I encourage students to continually evaluate what they read | 1 | 2 | 3 | 4 | 5 |
| 74. I ask students to evaluate unit, chapter, sections, titles and headings in their texts in the light of the following points:  
  - What are the main points in this passage?  
  - What details does it give?  
  - What ideas do those details support, elaborate or justify?  
  - Is the heading accurate, misleading, inappropriate?  
  - Could you suggest a better heading? | 1 | 2 | 3 | 4 | 5 |
| 75. I encourage students to discuss their interpretations of what they read | 1 | 2 | 3 | 4 | 5 |
| 76. I model critical listening by actively and constructively listening to students response | 1 | 2 | 3 | 4 | 5 |
| 77. I encourage students to listen to one another by asking questions like:  
  - 'x', did you follow what 'y' said?  
  - Could you put in your own words what 'y' said?  
  - Z, could you give us an example from your own experience of what 'y' has said? | 1 | 2 | 3 | 4 | 5 |
| 78. I encourage students to ask questions like:  
  - Why does he say that?  
  - Give an example to illustrate that point  
  - Is s/he using this word as I would, or somewhat differently?  
  - What is the main point? | 1 | 2 | 3 | 4 | 5 |
<table>
<thead>
<tr>
<th>Rating</th>
<th>1: Not at all</th>
<th>2: Hardly</th>
<th>3: Some times</th>
<th>4: Often</th>
<th>5: Very often</th>
</tr>
</thead>
<tbody>
<tr>
<td>79. I encourage students to ask key questions that enable him to locate himself in the thought of another</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>80. I examine a topic from the perspectives of several other subjects</td>
<td>1</td>
<td>2</td>
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<td>4</td>
<td>5</td>
</tr>
<tr>
<td>81. I encourage students to compare how data is gathered and used in different subjects</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>82. I encourage students to use relevant concepts, knowledge and insights from many subjects to analyse an issue.</td>
<td>1</td>
<td>2</td>
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<td>5</td>
</tr>
<tr>
<td>83. I encourage students to question each other and themselves</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>84. I express wonder about the reasoning behind students beliefs</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>85. I elicit students thoughts and probe deep into them.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>86. I ask questions like: - Why? - If that is so what follows? - Are you assuming that? - How do you know that? - Is this an example of what you meant? or is that? - Can I summarize your point as ____________________________ - What is your reason for saying so? __________________________________</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>87. I encourage students to distinguish between different meanings of the same word or phrase and recognise the different implications of each</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>88. I ask students to compare and contrast two or more ideas, phenomena etc.</td>
<td>1</td>
<td>2</td>
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<td>5</td>
</tr>
<tr>
<td>89. I make students distinguish general concepts from scientific concepts, e.g. work, energy.</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>5</td>
</tr>
<tr>
<td>90. I encourage students to distinguish ideas by discussing the different applications and implications of the concepts</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>91. I ask students to limit their remarks to facts which are relevant to the issue</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>92. I help students to see when their remarks are irrelevant</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>93. I ask students to read text with one or more issues in mind noting relevant details</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>94. I encourage students to discuss the relevant details noted from the text</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>95. I change issue slightly and have students compare what was relevant to the first issue to what is relevant to the second</td>
<td>1</td>
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<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Rating</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>1 - Not at all</td>
<td>2 - Hardly</td>
<td>3 - Some times</td>
<td>4 - Often</td>
<td>5 - Very often</td>
</tr>
<tr>
<td>96.</td>
<td>I ask students to make inferences based on a wide variety of statements and action</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>97.</td>
<td>I encourage the class to discuss and evaluate the inferences made by the group</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>98.</td>
<td>I help students to distinguish observations from inferences and sound inferences from unsound ones</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>99.</td>
<td>I ask students to give examples from their experiences of inferring incorrectly.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>100.</td>
<td>I ask for reasons of their conclusions like: - How do you know? - Why do you think so? - What evidence do you have?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>101.</td>
<td>I ask probing questions to elicit fuller explanations</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>102.</td>
<td>I ask questions like: - On what evidence is the conclusion based? - Where did you get the evidence? - Is the source reliable? - How could we find out what other evidence exists? - What evidences are available for opposing these views? - Is / are the evidence/s sufficient?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>103.</td>
<td>I ask students to state the implications of material in the text</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>104.</td>
<td>I ask questions like: - What does this imply / mean? - If this is true, what else must be true? - What were, or would be the consequence of this action, policy or solution? - Are the consequences desirable?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>105.</td>
<td>I suggest changes and ask for consequences of changes</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>106.</td>
<td>I encourage exploring the implications and consequences of their own beliefs</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
HOME BACKGROUND DATA SHEET (HBDS)

Dear Student,

What is in your hand is a home background data sheet. Kindly go through each item carefully and mark your response in the space provided. You are free to take the help of your family members or any elders in case you find any difficulty in giving your responses. This is purely for a research work and the information supplied by you will be kept confidential and used only for my research purpose. I look forward to receiving the filled-up data sheet at the earliest.

With good wishes,

(Paily M. U.)

Place: Ponda
Date

Paily M. U.
Lecturer
G. V. M's College of Education
Ponda - Goa - 403 401
HOME BACKGROUND DATA SHEET

I. General Information

1. Name of the Student: ____________________________
2. Name of the School: ____________________________
3. Class and Division: ____________________________
4. Age: ____________________________
5. Gender (Male/Female): ____________________________
6. Religion: ____________________________
7. Caste: ____________________________
8. State to which you belong: ____________________________
9. Mother tongue: ____________________________
10. The place of residence (Rural/Urban): ____________________________
11. Language/s Known
   a) Spoken ____________________________
   b) Spoken & Written ____________________________

II. Details of Family Members

1. Type of family (Nuclear/Joint): ____________________________
2. Total members in the family including yourself: ____________________________
3. Number of brothers (staying in the family): ____________________________
   (Specify the details about each in order in the table given below)

<table>
<thead>
<tr>
<th>Relationship (Brother)</th>
<th>Age</th>
<th>Educational / Professional Qualification</th>
<th>Occupation</th>
<th>Salary / income (Monthly)</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Brother</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Second Brother</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Third Brother</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fourth Brother</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Assets (in Rupees) ____________________________
4. Number of Sisters (staying in the family):

(Specify the details about each in order in the table given below)

<table>
<thead>
<tr>
<th>Relationship (Sister)</th>
<th>Age</th>
<th>Educational / Professional Qualification</th>
<th>Occupation</th>
<th>Salary / Income (Monthly)</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Sister</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Second Sister</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Third Sister</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fourth Sister</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Assets (in Rupees) ____________________________

5. Parents (please give the details below)

<table>
<thead>
<tr>
<th></th>
<th>Age</th>
<th>Qualifications</th>
<th>Occupation</th>
<th>Salary / Income (monthly)</th>
<th>Total Assets (in Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Father</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.

i) Does your father hold any responsible position in the community? Yes / No ____________________________
If yes please specify the details

ii) Does your mother hold any responsible position in the community? Yes / No ____________________________
If yes please specify the details

iii) Do your brothers or sisters hold any responsible position in the community? Yes / No ____________________________
If yes please specify the details
7. Any other members staying in the family (please supply the following details)

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Relationship</th>
<th>Age</th>
<th>Qualifications</th>
<th>Occupation</th>
<th>Salary/income (monthly)</th>
<th>Total Assets (in Rs.)</th>
<th>How long he/she has been staying</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

8. Do the above members have any responsible position in the community? Yes/No ________________

If yes please specify the details

____________________________________________________________________________________

III. Facilities Available At Home

1. Do you have a T.V. at home? Yes/No ________________

b. If yes, Name the programmes you watch on T.V.

____________________________________________________________________________________

____________________________________________________________________________________

c. Do you discuss with your parents/elders after watching a particular programme on T.V.

Always/Sometime/not at all

d. If always/sometimes, which programmes and what aspects do you discuss?

(Please mention in brief)

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

2. Do you have a radio at home? Yes/No ________________

b. If yes, what are the programmes you hear?

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________
c. Do you discuss with your parents / elders after listening to a particular programme? Always / sometimes / not at all

d. If always / sometimes, which programmes and what aspects do you discuss? (Please mention in brief)

3 a. Do you have a tape recorder at home? Yes / No

b. If yes, what types of cassettes do you hear?

c. Other than entertainment for what other purpose do you use the tape recorder? (Please specify)

4 a. Do you have a telephone at home? Yes / No

b. If yes, do you use / attend the telephone at home? Always / Sometime / not at all

c. If always / sometime, what are the various purposes for which you use your telephone? (Please specify)

5 a. Do you have a computer at home? Yes / No

b. If yes, do you use the computer? Yes / No

c. If yes, what are the various purposes for which you use your computer? (Please specify)

6 a. Do you get newspaper(s) at home? Yes / No

b. If yes, mention the name of the newspaper(s)
c. Do you read newspaper(s) at home? Yes / No __________________________

d. If yes, what are the types of news you read daily? (Please specify)

________________________________________________________

________________________________________________________

________________________________________________________

e) Do you discuss with your parents/others various news items?  
Always / Sometimes / not at all.  ________________________________

f) If always / sometimes please specify the nature of news items and aspects of it.

________________________________________________________

________________________________________________________

________________________________________________________

7 a. Does your family subscribe for any magazine? Yes / No ______________________

b. If yes, mention the names of the magazines?

________________________________________________________

________________________________________________________

________________________________________________________

________________________________________________________

c. Do you read those magazines? Yes / No __________________________

b. If yes what are the types of articles you read? (Please specify)

________________________________________________________

________________________________________________________

________________________________________________________

e. Do you discuss with your parents/elders/others various articles that you have read  
always/sometimes/not at all ________________________________

f. If always/sometimes what aspects do you discuss? (Mention in brief)

________________________________________________________

________________________________________________________

________________________________________________________

8 a. Do you have a collection of books (home library) at home? Yes / No ______________________

b. If yes mention the types of books that you have at home? (fiction, educational, general etc.)

________________________________________________________

________________________________________________________

________________________________________________________
9  a. Do you have any facilities other than the above available at your home? Yes / No
   
   b. If yes, please specify the types of facilities available.

   
   c. Do you use these facilities? If yes how do you use them? (Mention in brief)

IV Practices at home

1. Language(s) spoken at home

2. Do you help your family members / community after school hours and on holidays?
   (Please specify the details of help)

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Members</th>
<th>Nature of help (please specify)</th>
<th>Often</th>
<th>sometimes</th>
<th>rarely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Father</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Mother</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Brother /s</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Sister /s</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Community (specify)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. Do family members help you in your studies after school hours and on holidays?
   (Please specify the details below)

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Members</th>
<th>Nature of help (please specify)</th>
<th>Often</th>
<th>sometimes</th>
<th>rarely</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
</tr>
</tbody>
</table>
4. What activities are you involved in after school hours and on holidays?
(Specify the details below including the appropriate time spent on these activities)

<table>
<thead>
<tr>
<th>Sl No</th>
<th>Activities</th>
<th>Your involvement</th>
<th>If yes, approximate time spend</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Studying</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Discussion of general matters with parents and elders</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Entertainment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Household work</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Games and sports (specify)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Computer class</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Music class</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Tutions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Dance class</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Reading</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Prayer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Religious instructions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>Any other (please specify)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. a. What festivals are celebrated at your home? (Please Specify)

1. __________________________________________________________
2. __________________________________________________________
3. __________________________________________________________
4. __________________________________________________________
5. __________________________________________________________
6. __________________________________________________________

b. Do you participate in these festivals? Yes / No ____________________________
If yes please specify the role you play / the way you participate.

______________________________________________________________
______________________________________________________________
______________________________________________________________
6 a. Do all of you family members sit at home during leisure hours and casually discuss various matters? Yes / No

b. If yes, please specify the matters and the nature of your participation

<table>
<thead>
<tr>
<th>Matters</th>
<th>Nature of Participation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7 a. Do you visit your neighbours and relatives? Yes / No

b. If yes, whether [often] / [sometimes] / [rarely] / [never] (Tick mark ✓ which ever is applicable)

c. What do you do during such visits (Please explain in brief)

8 Do your parents encourage you questioning various practices (like customs, traditions, rules, norms etc.) at home and society? Yes / No

9 Do your parents and elders ask you to follow everything without you questioning about it? Yes / No

10 Do your parents encourage you to discuss your problems / difficulties freely with them? Yes / No

11 With whom do you feel most free and least free to discuss your problems / difficulties?
   a) Father Ans. i) Most Free
   b) Mother
   c) Brother ii) Least Free
   d) Sister
   e) Grand parents
   f) Uncle
   g) Aunt
   h) Cousins

12 Do your parents / elders value your opinion on various matters? Yes / No

13 Do you get immediately everything / most of the things you ask for? Yes / No
V Facilities and practices in the home surroundings

1. Do you have a library in your community? Yes / No _________________
2. If yes, do you go to the library for reading? Yes / No _________________
3. What types of books, magazines and newspaper(s) do you have in library (please mention in brief)

<table>
<thead>
<tr>
<th>Books</th>
<th>Magazines</th>
<th>News Papers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

4. Do you have any clubs in your community? Yes / No _________________
5. If yes, please specify the nature and functions of this club (s).

________________________________________________________________________
________________________________________________________________________

6. Are you a member of this club? Yes / No _________________
7. If yes, a) how long have you been the member? b) What is your role?

________________________________________________________________________
________________________________________________________________________

8. If no, do you take part in the activities of the club without being the member? Yes / No _________________
9. What are some activities of the club that you have taken part in?

________________________________________________________________________
________________________________________________________________________

10. Any other facilities available in the community? (Please give details)

________________________________________________________________________
________________________________________________________________________
11. What are the various activities usually organised in your community? Do you take part in these activities? (please specify below)

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Programmes</th>
<th>Organised</th>
<th>your participation</th>
<th>Explain briefly your role in these programmes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Literary programme</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Cultural programme</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Health camp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Community survey</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Film show</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Talk by experts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Developmental activities (roads, house etc)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Environment building activities (cleaning, planting trees etc.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Any other</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Any Additional Information on any of the above

- Thank You -
APPENDIX - G

INFORMATION SCHEDULE

1. Name and Address of the School :
2. Location of the School :
3. Type of School : Government/Private
4. Achievement Score :

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Student</th>
<th>Achievement Score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Language</td>
<td>Social</td>
</tr>
<tr>
<td></td>
<td>Studies</td>
<td></td>
</tr>
</tbody>
</table>
## APPENDIX - H

Weightages given to the items (Occupation) in the Socio-economic Status Scale.

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Weightage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>a) If in Medicine</strong></td>
<td></td>
</tr>
<tr>
<td>Professor in a Medical College</td>
<td>46</td>
</tr>
<tr>
<td>MBBS in Govt. Medical Services</td>
<td>44</td>
</tr>
<tr>
<td>Psychological/Homeopath/Diploma holder</td>
<td>32</td>
</tr>
<tr>
<td>Compounder/ Nurse</td>
<td>14</td>
</tr>
<tr>
<td><strong>b) If a Government Officer</strong></td>
<td></td>
</tr>
<tr>
<td>Commissioner/District Magistrate</td>
<td>24</td>
</tr>
<tr>
<td>Civil Judge/Administrator</td>
<td>17</td>
</tr>
<tr>
<td>IAS/ equivalent Post</td>
<td>15</td>
</tr>
<tr>
<td><strong>c) If in Education and a principal</strong></td>
<td></td>
</tr>
<tr>
<td>P.G./Graduate/Engineering/Medical</td>
<td>37</td>
</tr>
<tr>
<td>Intermediate/Higher Secondary or equivalent</td>
<td>23</td>
</tr>
<tr>
<td>High School</td>
<td>10</td>
</tr>
<tr>
<td>Primary School</td>
<td>5</td>
</tr>
<tr>
<td><strong>d) If in Indian Army:</strong></td>
<td></td>
</tr>
<tr>
<td>Air Force</td>
<td></td>
</tr>
<tr>
<td>Commissioned</td>
<td>21</td>
</tr>
<tr>
<td>Non-Commissioned</td>
<td>11</td>
</tr>
<tr>
<td>Ground Force</td>
<td></td>
</tr>
<tr>
<td>Commissioned</td>
<td>17</td>
</tr>
<tr>
<td>Non-Commissioned</td>
<td>7</td>
</tr>
</tbody>
</table>
- Navy Force
  \begin{align*}
  \text{Commissioned} & \quad 15 \\
  \text{Non-Commissioned} & \quad 5
  \end{align*}

- C.R.P./B.S.F./Police
  \begin{align*}
  \text{Officer} & \quad 8 \\
  \text{Subordinate} & \quad 2
  \end{align*}

e) If an Officer:
- Income Tax/Railway/Education/Forest
\begin{align*}
\text{Income Tax/Railway/Education/Forest} & \quad 19
\end{align*}
f) If a lawyer:
\begin{align*}
\text{Lawyer} & \quad 17
\end{align*}
g) If a teacher:
- College lecturer
- Intermediate/H.S.
- School-Junior & Primary
\begin{align*}
\text{College lecturer} & \quad 17 \\
\text{Intermediate/H.S.} & \quad 12 \\
\text{School-Junior & Primary} & \quad 7
\end{align*}
h) If an author:
- Literature
- Text-books
- Notes/guide etc.
\begin{align*}
\text{Literature} & \quad 18 \\
\text{Text-books} & \quad 10 \\
\text{Notes/guide etc.} & \quad 7
\end{align*}
i) If a Trader:
- Owner of a big factory
- Owner of a small factory
- Chemist/Cloth Merchant/Pharmacist
- Hotel/Restaurant/General Merchant/
  Book-seller/Gold Smith/Food material
- Carpet/Vessel ware/Foot ware industries
\begin{align*}
\text{Owner of a big factory} & \quad 21 \\
\text{Owner of a small factory} & \quad 13 \\
\text{Chemist/Cloth Merchant/Pharmacist} & \quad 12 \\
\text{Hotel/Restaurant/General Merchant/Book-seller/Gold Smith/Food material} & \quad 9 \\
\text{Carpet/Vessel ware/Foot ware industries} & \quad 7
\end{align*}
j) If an Artist:
- Musician
- Dancer/Artist/Dramatist
\begin{align*}
\text{Musician} & \quad 12 \\
\text{Dancer/Artist/Dramatist} & \quad 8
\end{align*}
k) If an Engineer:
- Civil/Electrical/Mechanical
- Architect
\begin{align*}
\text{Civil/Electrical/Mechanical} & \quad 11 \\
\text{Architect} & \quad 6
\end{align*}
l) If a leader:
   - Minister/M.P. 14
   - M.L.A./M.L.C./Unions/Professional 10
   - Student/Accidental 7

m) If a manager:
   - Trade/Bank 10
   - Farm/Dairy/Cinema 6

n) If a farmer:
   - Owner of a farm 10
   - Less land cultivator 7
   - Agricultural labourer 6

o) Are you/your parents any of these?
   - Contractor/Selling and purchasing officer 5
   - Insurance Corporation/Bank employee 4
     Accountant
   - Craftsman/Peon 2
   - Labourer 1