**ADDENBROOKE’S COGNITIVE EXAMINATION-III**

**Scoring and Instructions Guide for Indian English Version**

These instructions were designed to make questions and scoring clear for the tester. Please read them carefully before administering the test.

If possible, leave scoring for the end of the session, as the participant will not be able to check whether the tester is ticking for correct answers or crossing for wrong ones. It might avoid anxiety that usually disturbs participant’s performance on the test.

1. **ATTENTION - Orientation - score 0 to 10**

**Administration:** Ask the participant for the time of the day, the day, date, month, season as well as the name of the hospital (or building, or number of an address), floor (or room, or street if an address), city, state, and country.

**Scoring:**

Score as correct if the time of the day, day, date, month, season is correct.

* For time of the day the participant must state if it is morning, afternoon, evening, or night. A probe can be made if the participant mistakes morning for afternoon and vice versa and evening for night and vice versa.
* A near approximation of date can be marked as correct. For e.g., instead of saying the exact date of the month, if the person can say the period of the month i.e., the starting, middle or end of the month, orientation of the person will be considered preserved. For 2nd January, if the participant responds as “beginning of the month” it can be considered as correct. For month, both English or Vernacular month will be considered correct. If a participant mentions date according to English Calendar and month according to vernacular calendar that will also be considered right, provided that the participant mentions that s/he is reporting from 2different calendars.
* When the season is changing (e.g., at the end of February) and the participant says, "Autumn" then ask, "could it be another season?" If the answer is "Summer", mark correct since the two seasons are in transition. For illiterate participants, the recognition of the prominent seasons (summer, monsoon, and winter) can be considered as correct.
* *Seasons*: Spring - September, October, November; Summer - December, January, February; Autumn - March, April, May; Winter - June, July, August.

Once the items get a score of correct response, the following scoring must be considered.

**Scoring**:

Correct response for *1 question*: score 2

Correct responses for *2 questions*: score 4

Correct responses for *≥ 3 questions:* score 5

* If the participant is at home, ask for the name of the place such as the apartment complex/retirement village and, for the floor, you might ask for the name of the room (e.g., kitchen, living room, etc). If at a single storey health setting, you could ask about a local landmark.
* If participants come from interstate, orientation for city may be scored somewhat more liberally. For instance, participants may say neighbouring cities, localities which can be accepted for city. Sometimes participants do not have the concept of city or state or country and uses the answers interchangeably. Like stating district for state. A bit of probing might help in generating the correct answer.

Once the items get a score of correct response, the following scoring must be considered.

**Scoring**:

Correct response for *1 question*: score 2

Correct responses for *2 questions*: score 4

Correct responses for *≥ 3 questions:* score 5

**2. ATTENTION - Registration of 3 Items - score 0 to 3**

**Administration:** Ask the participant to repeat and remember the three things that were bought from market. Speak slowly. Repeat the words if necessary but up to a maximum of 3 times only. Tell the participant that you will ask for this information later.

**Scoring:** Score the first attempt only. Record the number of trials it takes to learn all 3 words.

**3. ATTENTION - Serial Subtraction OR Naming of Days Backwards - score 0 to 5**

**Serial Subtraction**

**Administration:** Ask the participants, *“You have 20 bananas. You ate 3 on Monday how many are you left with. Now, if you eat 3 bananas each day tell me how many you will be left with on each day. Keep on saying until I ask you to stop.”* Stop the participant after 5 subtractions.

If the participants stop after the initial subtraction, ask how many are left after s/he had eaten on Tuesday. But even after that if the participant stops continuing, do not keep on prompting.

**Scoring:** Record responses and do not stop the participant if they make a mistake. Allow them to carry on and check subsequent answers for scoring (e.g., 18, 15, 12, 10, 7 - score = 3).

**Naming of Days Backwards**

**Administration:** If the participant is unable to perform on serial subtraction, then shift to naming days of week backwards. First ask the subject to name the days in correct order, if the subject succeeds in that, then only carry on and say, “*Now can you tell me the names of these days backwards*?’ If the participant fails to name the days in correct order, then, no need to carry on with the item.

**Scoring:** Give1 point for each correct response; total=5. Credit given only if the day precedes the day just named. If the subject skips 1 or 2 days, then picks up the correct backward sequence, he loses one point for the first error, then get points for correct responses after that (e.g., Sunday, Friday, Thursday: Score 0,1). "Saturday is given as an example, it does not get credit.

**4. MEMORY - Recall of 3 Items - score 0 to 3**

**Administration:** Ask the participant to recall the things that were bought from the market.

**Scoring:** Record responses and score 1 point for each correct item. Do not prompt the participant for the items.

**5. VERBAL FLUENCY - 2 Categories - score 0 to 14**

**Vegetables - score 0 to 7**

**Administration:** Tell the participant: "*Now can you name as many vegetables as possible*."

**Scoring:** First, record the total number of vegetable that the participant generates. (Write down the verbatim of the participants). Then, count the total number of correct words, which do not include repetitions. All types of vegetables are accepted, including indigenous vegetables and ones which may not be consumed/popular locally. Also accept vegetables which are popularly accepted as vegetable but falls under the fruit group (e.g., tomato). If the participant drifts away and articulate names of fruits, then stop them and repeat the instructions. If the client says same kind of vegetables one after the other, (for e.g., all kind of leafy vegetables) consider correct and give each 1 point.

Use the table provided on the ACE-III sheet to obtain the final score for this test.

**Animals - score 0 to 7**

**Administration:** Tell the participant: *"Now can you name as many animals as possible."*

**Scoring:** Again, record the total number of animals that the participant generates. Then, count the total number of correct words, which do not include higher order categories when specific exemplars are given (e.g., "fish" followed by "salmon" and "trout" - total = 3; correct = 2). All types of animals are accepted, including insects, humans, prehistoric, extinct as well as mythical creatures (e.g., unicorn).

Use the table provided on the ACE-III sheet to obtain the final score for this test.

**6. MEMORY - Anterograde Memory - Name and Address Story - score 0 to 7**

**Administration:** Instruct the participant: *"I'm going to tell you a story about a person, and I’d like you to repeat after me. So, that you get a chance to learn, we will be doing it 3 times. I'll ask you the story later."* If the participant starts repeating along with you, ask them to wait until you give it in full.

**Scoring:** Record responses for each trial but only responses in the third trial contribute to the ACE-III score (0- 7points). The participant may repeat various parts of the story, but the scoring is based on the name address and occupation only.

**7. MEMORY - Retrograde Memory – Famous people and facts - score 0 to 4**

**Administration:** Ask the participant for the name of any political leader, any festival that s/he celebrates, any actor, and in what season is mango/any seasonal fruit available?

**Scoring:** Score 1 point each. Allow surnames of political leaders (e.g., "Modi") and ask for a surname if only the first name is given (e.g., "Narendra"). If the full name given is incorrect (e.g., "N.T. Rama Rao"), then the score would be 0. Exact name of the festival has to be mentioned. If the participant gives physical description of actors, ask them to articulate the name. If the participant says, *“this season only”* (if the response is being taken in the month of summer) ask them to name the season.

**8. LANGUAGE - Comprehension - score 0 to 3**

**Administration:** Place a stick and a piece of paper in front of the participant. As a practice trial, ask the participant to *"pick up the stick and then the paper"*. If this is incorrectly performed, score 0 and do not continue any further.

Otherwise, continue onwards with the three other commands listed on the protocol. Before beginning each trial, always place the stick and piece of paper in front of the participant.

**Scoring:** A score of 1 is given for each command performed correctly.

**Copying Gesture- score 0 to 1**

Administration- The test administrator asks the person to copy whatever he/she is doing and then closes his/her eyes.

**Scoring**- Give 1 point if the participant closes his/her eyes for few seconds.

**9. LANGUAGE Verbally Making 2 to 3 sentences - score 0 to 1**

**Administration:** Ask the participant to verbally report what he/she does in a day.

Ask the participant to say 2 to 3 complete sentences.

**Scoring:** Give 1 point if there are at least two to three sentences about the topic.

Examples:

|  |  |
| --- | --- |
| Points | Description of Sentence |
| Score 1 | I wake up in the morning. I brush my teeth after that and next have my breakfast. Then I usually do some household chores. |
| Score 0 | Sit idle. |
| Score 0 | Wake up, go to market, eat rice. |

**N.B. –** If the participant reports that s/he does not do anything worthwhile during the day, please ask him/her to mention about his/her daily routine. If the participant fails to do that too, then only score 0.

**10. LANGUAGE - Single Word Repetition - score 0 to 2**

**Administration:** Ask the participant to repeat each word after you, say only one word at a time.

**Scoring:** Only the first attempt is scored. Score 2 if all words are correct; 1 if only 3 are correct; 0 if 2 or less are correct.

**11. LANGUAGE - Proverb Repetition - score 0 to 2**

**Administration:** Ask the participant to repeat each proverb.

**Scoring:** Do not accept partially correct repetitions (e.g., "all that glistens is not gold"). Score 1 point for each proverb.

**Note-** *Illiterate people have some difficulties in clear pronunciation or often are habituated in speaking a certain dialect. For repetition of words or sentences, a correct score maybe allowed if all the syllables have been pronounced.*

**12. LANGUAGE** - **Object Naming - score 0 to 12**

**Administration:** Ask the participant to name each picture.

**Scoring:** Correct answers are spoon; flag; dog; peacock; sickle; camel; tabla; elephant; umbrella; necklace; crocodile; candle.

**13. LANGUAGE - Point to Pictures - score 0 to 4**

**Administration:** Ask the participant to point to the pictures according to the statement read. Do not provide any feedback regarding the word meaning.

**Scoring:** Score 1 point for each item. Self-corrections are allowed.

**14. LANGUAGE – Semantic Matching- score 0 or 1**

**Administration:** Ask the participants to match the pictures in the 2nd row and 3rd row based on association.

**Scoring:** Score 1 point if all 3 are correct. Score 0 if any of the responses are wrong.

If the participant fails to recognize all the pictures, help them to identify them. But once the pictures have been recognized, do not correct the participants again if they make any mistake while matching.

**15. VISUOSPATIAL ABILITIES - Intersecting Rectangles - score 0 or 1**

**Administration:** Ask the participant to copy the intersecting rectangles.

**Scoring:** A score of 1 is given if two rectangles are drawn and overlap. Both rectangles must come to a point/cross and the smaller one should be in the left-hand side and bigger one in the right-hand side.

Examples:

|  |  |
| --- | --- |
| Score 0 | |
|  |  |
| Score 1 | |
|  |  |

**16. VISUOSPATIAL ABILITIES** – **Square with 4 circles at the corners - score 0 to 2**

**Administration:** Ask the participant to copy the square with 4 circles at the corners.

Scoring: The square should have 4 equal sides. The sides should not be grossly disproportionate and represent a rectangle. A score of 1 is given if the square is right. The four circles should be at four corners and touch the square and the circles should be a full round and not half or any other form. A score of 1 is given if the circles are placed correctly.

Examples:

|  |  |
| --- | --- |
| Score 0 | |
|  |  |
| Score 1 | |
|  |  |
| Score 2 | |
|  |  |

**17. VISUOSPATIAL ABILITIES** – **Human Face- score 0 to 5**

**Administration:**

Ask the participant to draw a human face and elaborate by saying make a circle, put 2 eyes, 2 ears, 1 nose and 1 mouth. The facial parts should be placed in correct positions.

If the participant does not like their first drawing and would like to do it again, you can allow for that and score the second face. Participants may correct their mistakes by erasing it while drawing.

**Scoring:** The following scoring criteria are used below to give a total of 5 points.

|  |  |
| --- | --- |
| Score 0- No definite shape has been made | Score 1- Gets a score of 1 for making a circle |
|  |  |
| Score 2- Only two components have been drawn properly, the face and the eyes or ears. | |
|  |  |
| Score 3- The face has been drawn properly and the eyes and ears are properly placed but the nose and mouth are not in proper position. | |
|  |  |
| Score 4- The face has been drawn correctly , the eyes, nose and mouth are placed properly, however the ears have been placed improper position. | |
|  |  |
| Score 5- The face has been drawn correctly and eyes, ears, nose and mouth has been placed properly. | |
|  |  |

**18. PERCEPTUAL ABILITIES - Counting Dots - score 0 to 4**

**Administration:** Ask the participant for the number of dots in each square. The participant is not allowed to point.

**Scoring:** Score 1 point for each correct answer. Correct answers: 8, 10, 9 and 7.

**19. PERCEPTUAL ABILITIES - Identifying Fragmented Pictures - score 0 to 4**

**Administration:** Ask the participant to identify the images in each square. The participant is allowed to point.

**Scoring:** Score 1 point for each correct answer. Correct answers: Flower, Key, Cow and Umbrella.

**20. MEMORY - Recall of Name and Address - score 0 to 7**

**Administration:** Say to the participant: *"Now tell me what you remember about the story (name & details) we were repeating at the beginning"*.

**Scoring:** Score 1 point for each item recalled, using the score guide provided in the test.

**Sunil Roy**

**52, College Road**

**Business**

**Asansol**

**21. MEMORY – Recognition of Name and Address – score 0 to 5**

**Administration:** This condition is given to participants if they fail to recall one or more items in the Recall condition. This task is given to allow the participant a chance to recognise items that he/she could not recall. If all the items in the name and address are correctly recalled, this condition is not needed, and the participant automatically scores 5 points. However, many participants will recall only parts of the name and address. First, tick the correctly remembered items on the shaded column (right hand side) and then tell the participant, “Let me give you some hints. Was it x, y or z?” and so on.

**Scoring**: Every item recognised correctly scores 1 point. Add the correctly recalled and recognised item to give a total of 5 points for this condition.

**NOTE**- The SOP is made according to the ACE-III illiterate English Version. Changes in examples may be made according to the specific language (if necessary).