PSYCHOLOGY
Units 3 & 4
Trial Examination

SOLUTIONS BOOK
Use this page as an overlay for marking the multiple choice answer sheets. Simply photocopy the page onto an overhead projector sheet. The correct answers are open boxes below. Students should have shaded their answers. Therefore, any open box with shading inside it is correct and scores 1 mark.

<table>
<thead>
<tr>
<th>ONE ANSWER PER LINE</th>
<th>ONE ANSWER PER LINE</th>
<th>ONE ANSWER PER LINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36</td>
<td></td>
<td></td>
</tr>
<tr>
<td>37</td>
<td></td>
<td></td>
</tr>
<tr>
<td>38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>39</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>41</td>
<td></td>
<td></td>
</tr>
<tr>
<td>42</td>
<td></td>
<td></td>
</tr>
<tr>
<td>43</td>
<td></td>
<td></td>
</tr>
<tr>
<td>44</td>
<td></td>
<td></td>
</tr>
<tr>
<td>45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>47</td>
<td></td>
<td></td>
</tr>
<tr>
<td>48</td>
<td></td>
<td></td>
</tr>
<tr>
<td>49</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>51</td>
<td></td>
<td></td>
</tr>
<tr>
<td>52</td>
<td></td>
<td></td>
</tr>
<tr>
<td>53</td>
<td></td>
<td></td>
</tr>
<tr>
<td>54</td>
<td></td>
<td></td>
</tr>
<tr>
<td>55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>56</td>
<td></td>
<td></td>
</tr>
<tr>
<td>57</td>
<td></td>
<td></td>
</tr>
<tr>
<td>58</td>
<td></td>
<td></td>
</tr>
<tr>
<td>59</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>61</td>
<td></td>
<td></td>
</tr>
<tr>
<td>62</td>
<td></td>
<td></td>
</tr>
<tr>
<td>63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>64</td>
<td></td>
<td></td>
</tr>
<tr>
<td>65</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SECTION A – Multiple-choice questions

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>D</td>
<td>14</td>
<td>A</td>
<td>27</td>
<td>B</td>
<td>40</td>
</tr>
<tr>
<td>2</td>
<td>D</td>
<td>15</td>
<td>A</td>
<td>28</td>
<td>A</td>
<td>41</td>
</tr>
<tr>
<td>3</td>
<td>A</td>
<td>16</td>
<td>C</td>
<td>29</td>
<td>A</td>
<td>42</td>
</tr>
<tr>
<td>4</td>
<td>D</td>
<td>17</td>
<td>B</td>
<td>30</td>
<td>D</td>
<td>43</td>
</tr>
<tr>
<td>5</td>
<td>D</td>
<td>18</td>
<td>B</td>
<td>31</td>
<td>A</td>
<td>44</td>
</tr>
<tr>
<td>6</td>
<td>D</td>
<td>19</td>
<td>C</td>
<td>32</td>
<td>C</td>
<td>45</td>
</tr>
<tr>
<td>7</td>
<td>A</td>
<td>20</td>
<td>C</td>
<td>33</td>
<td>B</td>
<td>46</td>
</tr>
<tr>
<td>8</td>
<td>C</td>
<td>21</td>
<td>C</td>
<td>34</td>
<td>B</td>
<td>47</td>
</tr>
<tr>
<td>9</td>
<td>D</td>
<td>22</td>
<td>B</td>
<td>35</td>
<td>C</td>
<td>48</td>
</tr>
<tr>
<td>10</td>
<td>D</td>
<td>23</td>
<td>A</td>
<td>36</td>
<td>B</td>
<td>49</td>
</tr>
<tr>
<td>11</td>
<td>C</td>
<td>24</td>
<td>A</td>
<td>37</td>
<td>D</td>
<td>50</td>
</tr>
<tr>
<td>12</td>
<td>D</td>
<td>25</td>
<td>A</td>
<td>38</td>
<td>C</td>
<td>51</td>
</tr>
<tr>
<td>13</td>
<td>A</td>
<td>26</td>
<td>B</td>
<td>39</td>
<td>B</td>
<td>52</td>
</tr>
</tbody>
</table>

SECTION B – Short Answer Questions

Question 1

a. Answer
   • REM sleep
     1 mark Students make the above point

b. Answer
   • **EOG**: detects, amplifies and records electrical activity of muscles that move the eyes; can be used to determine if person is in REM sleep
   • **EMG**: detects, amplifies and records electrical activity of skeletal muscles; can be used to determine if person is in deep sleep or in REM sleep
     2 marks Students make both of the above points
     1 mark Students make one of the above points

c. Answer
   • Stage 1 sleep; just falling asleep
     1 mark Students make the above point

d. Answer
   • Absence of delta waves (large, slow waves)
     1 mark Students make the above point

Question 2

a. Answer
   • Adolescents require more sleep than children just prior to adolescence (but usually get less).
   • Sleep-wake cycle shift leading to later sleep onset and correspondingly later waking.
     2 marks Students make both of the above points
     1 mark Students make one of the above points

b. Answer
   • Changes are believed to be hormonally induced; the sleep hormone, melatonin, is produced later.
   • Increase in production of human growth hormone – uses up extra energy.
     1 mark Students make one of the above points
Question 3

Answer
- Only II
- Visual information received by the left visual field is transmitted to the right hemisphere.
- To be described, the information must be transmitted to the left hemisphere, where the speech centres are located.
- The severing of the corpus callosum makes this impossible, so she will not be able to name the object, but she will be able to pick it out of a box with her right hand.

3 marks Students correctly identify II and explain it
2 marks Students’ correctly identify response but explanation is incomplete
1 mark Students’ response is correct but superficial

Question 4

a. Answer
- Adaptive plasticity refers to the brain’s ability to compensate for lost functionality (usually due to brain damage) and in response to environmental interactions, by re-organising its structure. It occurs at all ages, but the processes that are involved are more efficient in early childhood.

1 mark Students make the above point

b. Answer
- In the case of Nico, due to adaptive plasticity, he was able to compensate for the loss of the hemisphere by transferring function to other brain areas.
- Because Nico retained language functions it was most likely the right hemisphere was removed

2 marks Students make both of the above points
1 mark Students make one of the above points

Question 5

a. Answer
- On average, 7 ±2 individual units of information.

1 mark Students make the above point

b. Answer
- For example, if Dane has to memorise 25 items of information, he can group this information into five ‘chucks’.
- Each ‘chunk’, as a single unit, takes up only one of the five to nine ‘spaces’ available in STM. Hence, overall more information can be stored in STM.

2 marks Students give appropriate example and explain why chunking would increase storage
1 mark Students give incomplete but correct information

Question 6

Answer
- Central executive: would channel attention to this particular problem and would direct operations; would integrate information from the other systems, e.g. 1st 7 x 4, then 1 x 4.
- Phonological loop: would store speech like information for a short period of time, e.g. after multiplying 7 by 4, the phonological loop would store ‘8, carry 2’, while the next step (1 x 4) was being undertaken.

2 marks Students make both of the above points
1 mark Students make one of the above points

Question 7

a. Answer
- Adair: maintenance rehearsal (MR)
- Ben: elaborative rehearsal (ER)

2 marks Students identify each strategy
1 mark Students identify only one strategy
b. Answer
- Research shows that MR keeps information in STM but is not effective in transferring it to LTM.
- ER it is effective in transferring information into LTM, because it links new information to that already in LTM.

2 marks Students make both of the above points
1 mark Students make one of the above points

Question 8
Answer
- Increase in the amount of neurotransmitters released by neurons.
- Growth of dendritic spines causes strengthening of connections between communicating neurons.
- Formation of new synaptic connections.

3 marks Students list three changes
2 marks Students list two of the changes
1 mark Students list one of the changes

Question 9
Answer
- Loftus argues that memory is reconstructive (not fixed) i.e. we continue to integrate new information about an event after it has occurred.
- Therefore the initial memory can be altered by subsequent events, including questions during a second police interview.

2 marks Students make both of the above points
1 mark Students make one of the above points

Question 10
a. Answer
- Group I uses narrative chaining.

1 mark Students make the above point

b. Answer
- Descriptive statistic
- Inferential statistic

2 marks Students make both of the above points
1 mark Students make one the above points

c. Answer
- Probably not
- Difference between means was significant, suggesting it was due to the manipulation of the IV and not to chance.
- However, participants were not randomly allocated to groups, so the two groups were not necessarily matched and difference may have been due to initial differences in ability.

2 marks Students make both of the above points
1 mark Students make one of the above points

Question 11
a. Answer
- Recall

1 mark Students make the above point

b. Answer
- Recall is less sensitive;
- Recall retrieves less information

1 mark Students make one of the above points
c. Answer

2 marks  Students draw curve (similar to that above) that shows primacy and recency effects
1 mark  Students' curve is partially correct

d. Answer
- Superior recall of 1st part of list (primacy effect) is due to information being rehearsed in STM and transferred into LTM.
- Superior recall of last part of list (recency effect) is due to information still being in STM.
2 marks  Students explain primacy and recency effects
1 mark  Students explain either primacy or recency but not both

e. Answer
- Recency effect will be lost.
1 mark  Students make the above point or draw an appropriate curve on axes

Question 12

a. Answer
- Examples include: birds' nest building; mating behaviours; care of offspring, etc.
1 mark  Students give an appropriate example

b. Answer
- Both are inborn/genetically programmed responses to some environmental stimulus.
- Neither has to be learned.
1 mark  Students make one of the above points

c. Answer
- Reflex responses are simple, automatic and involuntary; they occur in essentially the same way each time.
- They are not species-specific.
- A fixed action pattern is more complex, involving a greater range of behaviours; not necessarily present in all members of a species, e.g. may occur in one gender only.
2 marks  Students describe differences between the two behaviours
1 mark  Students identify features of one behaviour only

Question 13

a. Answer
- For Sean, the rise in blood pressure in the doctor's rooms is a symptom of a conditioned fear response.
1 mark  Students make the above point

b. Answer
- Initially: Doctor's office - neutral stimulus (NS) → no response
  → pain due to injections (UCS) → fear in response to pain of injections (UCR)
- After several pairings: Doctor's office (CS) → fear of office (CR)
2 marks  Students identify NS, UCS, UCR, CS and CR
1 mark  Students omit 1-2 of the above elements
Question 14
a. Answer
- Positive reinforcement: a schedule where the giving of a positive stimulus increases the occurrence of the desired behaviour, e.g. Chris rewarding her son with attention or gifts or privileges when he does housework.
- Negative reinforcement: a schedule where taking away a negative stimulus increases the occurrence of the desired behaviour, e.g. if he finishes his chores Chris’s son can avoid having to visit very annoying aunt on Saturday afternoon.
2 marks Students adequately explain positive and negative reinforcement and give appropriate example
1 mark Students explain concepts or give examples but not both

b. Answer
- Punishment can lead to aggression and resentment.
- Through classical conditioning, the child can form an association between the punisher and person administering it and develop a conditioned fear response to him/her.
- Ineffective if not administered immediately following behaviour.
2 marks Students make two of the above points
1 mark Students make one of the above points

Question 15
Answer
- Attention: Zak did not pay adequate attention during the demonstration because he:
  - was tired/unwell
  - did not like/respect/identify with the presenter
  - did not consider the behaviour being demonstrated to be important
- Retention: Zak was unable to remember the sequence involved.
- Reproduction: Zak does not feel he has the ability to perform the movements.
- Motivation: Zak is not motivated to try; doing well is not important to him.
2 marks Students make two of the above points
1 mark Students make one of the above points

Question 16
a. Answer
- Primary appraisal: evaluation of the significance of the situation, which leads to a decision as to whether the situation is positive/neutral/stressful, e.g. How serious is this/How does it affect me/What are the advantages/issues?
- Secondary appraisal: evaluation of own capacity to cope and the available options, e.g. ‘do I have the inner strength/money/family support’, etc.
2 marks Students identify elements of each appraisal
1 mark Students make one of the above points

b. Answer
- Problem-focused coping involves efforts to manage the stressor. Kym may:
  - determine specific flight departure date,
  - determine the consequences of missing SAC,
  - make alternative transport arrangements, etc.
- Emotion-focused coping involves attending to the emotional response, usually trying to reduce its strength. Minna may:
  - express her emotions strongly (‘venting’),
  - become fatalistic.
  - try to reduce the impact of the emergency, etc.
2 marks Students identify the elements of each strategy and give an example of a specific behaviour each girl may exhibit
1 mark Students explain only one strategy or give an incomplete answer
Question 17
Answer
- ‘Social factors’ refers to the effects that others have on one’s levels of stress. In Riko’s case, she may have support provided by:
  - family/friend/work colleagues,
  - community/self-help groups, e.g. Beyond Blue, chat rooms, etc.
- ‘Cultural factors’ refers to the extent to which living within a particular culture affects one’s levels of stress. In Riko’s case, the culture may:
  - accept (not stigmatise) people suffering from mental illness,
  - be one to which she is ‘acculturated’, and which does not contribute to her stress levels.
- ‘Environmental factors’ refers to conditions present in one’s living place. In Riko’s case, the environment may be relatively non-stressful, e.g. free of excessive noise, crowding etc.

3 marks Students identify ways in which each category of factor can act in a positive way, rather than as a stressor.
2 marks Students discuss two factors only or give partial answers
1 mark Students discuss only one factor or give a largely incomplete answer

SECTION C – Research scenario

Question 1
Answer
- The results of a controlled experiment can be used to support/reject a hypothesis.

1 mark Students make the above point

Question 2
Answer
Possible hypotheses are:
- Participants aged 60 and over who implement the Brain-Train programme for six months will score significantly higher on tests of semantic memory, compared to participants implementing a programme with no known memory improvement benefits.
- Participants who are 70+ will show a greater improvement than those aged 60 – 70.

2 marks Students provide population, IV and DV of one hypothesis
1 mark Students give an imprecise response

Question 3
Answer
- A representative sample ‘stands for’ the population.
- If a sample is not representative, cannot generalise results to population (people aged 60+).

2 mark Students make both of the above points
1 mark Students give an imprecise response
Question 4 (10 marks)

Note: This question is marked holistically. Specifically, students are assessed on extent to which they:
- identify and describe the key terms/theories/issues
- explain the relevant terms/theories/issues and make connections between psychological concepts/theories and data and research
- use appropriate examples/evidence/data to support the response
- interpret and analyse the issues/data/information
- evaluate issues/data/information and draw appropriate conclusions (VCAA Marking Guide)

To facilitate teacher marking, possible responses are given below.

Participant selection and allocation

Answer
- Participants need to be in different age categories and numbers are small so stratified sampling would probably be the most effective selection method.
- Allocation into groups should be random; a possible arrangement may be as follows:

<table>
<thead>
<tr>
<th>Age range</th>
<th>Group on Brain-Train programme</th>
<th>Group doing placebo activities (?)</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 - 70</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>70+</td>
<td>15</td>
<td>15</td>
</tr>
</tbody>
</table>

Materials (tests, inventories, etc) used

Answer
Selection of materials will depend on hypothesis. However, students need to identify and, if necessary, briefly describe:
- the Brain-Train materials,
- a measure of changes in semantic memory capacity, e.g. a test.

Research design

Answer
The study may require:
- independent groups, for comparison of those doing programme and those not on programme, or
- repeated measures, to test the effect of age on extent of improvement.

Data collection procedures

Answer
Procedure will depend on hypothesis; however, it will most likely require:
- testing all participants’ semantic memory abilities before and after completion of programme,
- description of how Brain-Train programme will be implemented by experimental group and treatment of the control group, e.g. are they exposed to some placebo activity?

Control of extraneous variables

Answer
Control of extraneous variables would most likely focus on:
- using a double-blind design to control for participant expectations and experimenter effects,
- conducting the study using standard procedures.

END OF SUGGESTED SOLUTIONS