**TRANBY COLLEGE**

**Psychology | ATAR | Unit One**

## Semester One Examination 2015 - Question/Answer Booklet

## 

## SCSA Student Number:

## TIME ALLOWED FOR THIS PAPER

## Reading time before commencing work: Ten minutes

## Working time for paper: Three hours

## MATERIALS REQUIRED/RECOMMENDED FOR THIS PAPER

***TO BE PROVIDED BY THE SUPERVISOR***

This Question/Answer Booklet

***TO BE PROVIDED BY THE CANDIDATE***

*Standard Items:* Pens, pencils, eraser and ruler.

*Special Items:* Calculators satisfying the conditions set by the Schools Curriculum and Standards Authority (SCSA)–*no graphics calculators permitted.*

## *INSTRUCTIONS TO CANDIDATES*

**No other items may be taken into the examination room.**

**It is your responsibility to ensure that you do not have any unauthorised notes or other items of a non-personal nature in the examination room. If you have any unauthorised material with you hand it to the supervisor BEFORE reading any further.**

**Structure of this paper**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Section** | **Number of questions available** | **Number of questions to be answered** | **Suggested working time (minutes)** | **Marks available** | **Percentage of examination** | **Marks obtained** | **Weighted marks** |
| Section One:  Research methods | 2 | 2 | 30 | 20 | 20 |  |  |
| Section Two:  Short answer | 5 | 5 | 90 | 60 | 55 |  |  |
| Section Three:  Extended answer | 2 | 2 | 60 | 40 | 25 |  |  |
|  |  |  |  |  |  | **Total Score** |  |

**Instructions to candidates**

1. The rules for the conduct of this and the Western Australian external examinations are detailed in the *Year 12 Information Handbook 2014* and *Tranby College’s Assessment Policy.* Sitting this examination implies that you agree to abide by these rules.
2. You must be careful to confine your responses to the specific questions asked and to follow any instructions that are specific to a particular question.
3. Spare pages are included at the end of this booklet. They can be used for planning your responses and/or as additional space if required to continue an answer.
   1. Planning: If you use the spare pages for planning, indicate this clearly at the top of the page.
   2. Continuing an answer: If you need to use the space to continue an answer, indicate in the original answer space where the answer is continued, i.e. give the page number. Fill in the number of the question(s) that you are continuing to answer at the top of the page.

**Section One: Research Methods (20 marks)**

This section has two (2) questions. Write your answers in the spaces provided. Spare pages are included at the end of this booklet. They can be used for planning your responses and/or as additional space if required to continue an answer.

* Planning: If you use the spare pages for planning, indicate this clearly at the top of the page.
* Continuing an answer: If you need to use the space to continue an answer, indicate in the original answer space where the answer is continued, i.e. give the page number. Fill in the number of the question that you are continuing to answer at the top of the page.

**Question One (10 marks)**

An experiment was conducted to determine the effect of meditation on memory. Researchers randomly divided 100 Year 11 students into two groups, with 50 participants in each group. Group One participated in 20 minutes of meditation before the test while Group Two did not participate in meditation. All participants sat a memory recall test at the same venue at the same time. The test required participants to recall as many words as possible from a list of 20 words they had been shown earlier.

1. What is the independent variable?

|  |
| --- |
| **Meditation (or application of independent variable vs no meditation)** |

(1)

1. List **two (2)** variables the researchers controlled in this study.

**Any two of: education level/ venue/ time/age**

**One mark each**

(2)

1. Write an operational hypothesis for this study.

**One mark each for:**

* **20 minutes of meditation;**
* **memory recall test, and;**
* **year 11 students.**

**E.g. 20 min meditation will improve the memory recall test scores of year 11 students.**

(3)

1. Identify two (2) ethical considerations relevant to this study. For each consideration, identify how the researchers should deal with it.

|  |
| --- |
| **One mark for ethical consideration and one mark for appropriate action.**   * **Informed consent/ Underage participants: guardians receive information and sign to agree to participation.** * **Withdrawal rights: can leave study any time without ramifications/ pressure** * **Do no harm: meditation and study will not harm participants** * **Do some good: proof that meditation can be beneficial to memory** * **Confidentiality: share no personal details** * **Anonymity: assign numbers to participants to avoid identification** * **Voluntary participation: Do not coerce participants; compensation to be commensurate.** |

(4)

**Question Two (10 marks)**

Researchers wanted to determine whether eating a healthy lunch improved mood. A sample of 10-year old boys was provided with a healthy lunch consisting of a sandwich and fruit. The boys were then asked to rate their mood on a 10-point scale. The responses were rated to give a ‘mood score’ where 10 was the most positive. The results are shown in Table 1.

Table 1

*Mood Scores for 10-Year Old Male Students After Eating a Healthy Lunch*

|  |  |
| --- | --- |
| Participant | Mood Score |
| 1 | 2 |
| 2 | 1 |
| 3 | 7 |
| 4 | 6 |
| 5 | 2 |
| 6 | 2 |
| 7 | 1 |

1. Is there an evidence-based conclusion the researchers could draw from this study?

|  |
| --- |
| **No evidence based conclusion is possible** |

(1)

1. This research method was criticised for having poor reliability. Define reliability as it is used in psychological research.

|  |
| --- |
| **The consistency of the measure.**  **Same results gained when test repeated/ test-retest/inter-rater/etc.** |
|  |

(1)

1. This research method was criticised for having poor validity. Define validity as it is used in psychological research.

|  |
| --- |
| **The test measures what it is supposed to measure (and is accurate).** |

(1)

1. Calculate the mode, mean and median mood score from these results.
   1. Mode **2**
   2. Mean **3**
   3. Median **2**

(3)

1. Identify two (2) sources of error in this experimental design. For each source of error, state how the design could be improved.

**One mark for each design error and one mark for the appropriate improvement:**

**Any two:**

* **Small sample size: increase participant numbers**
* **No control group/basis for comparison: have control group without healthy lunch**
* **Experimenter bias: Ensure that the experimenter does not know which group had the healthy lunch.**
* **Demand characteristics: Ensure that the boys do not know what is happening so that they don’t provide the results they think the experimenter wants to know.**
* **Observer bias: Ensure that the observers to do not influence the results by seeing what they want to see. Have a non-aligned person implement the test.**
* **No controlled variables: state the variable that was uncontrolled then describe how to control it. E.g. boys could have had different food prior to test - ensure have no food prior to lunch/ control diet.**
* **Unrepresentative sample (only boys): mix of genders**

(4)

**End of Section One**

**Section Two (60 marks)**

This section has five (5) questions. Answer all questions. Write your answers in the spaces provided. Spare pages are included at the end of this booklet. They can be used for planning your responses and/or as additional space if required to continue an answer.

* Planning: If you use the spare pages for planning, indicate this clearly at the top of the page.
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**Question Three (13 marks)**

1. While Madison was repairing a roof she fell eight metres to the ground. As a result of the fall, Madison now has trouble understanding and remembering what her customers say to her.
   1. The lobe of the brain most likely affected in this case is the   
      **Front Lobe**.

(1)

* 1. If Madison was unable to recognise faces, the lobe of the brain most likely affected would be the  
     **Temporal Lobe**

(1)

* 1. If Madison had lost the ability to process visual information, the lobe of the brain most likely affected would be the   
     **Occipital Lobe**

(1)

1. Rhonda is a talented painter and is excelling in her visual arts class. However, she struggles in some of her other classes, particularly mathematics. Her mother tells her that she is a ‘right-brain’ thinker. This is a common oversimplification. Explain what is wrong with this comment.

**Both hemispheres are involved in the majority of behaviours (1). Must have!**

**Plus one of the following (or other relevant explanation) (1)**

* **A small percentage of people have reversed hemispheric specialisation for some functions (e.g. language).**
* **Though it is true that many processes are dominantly right-brain functions – for most functions this is a relative, not absolute, dominance.**
* **Hemispheric specialisation is much more pronounced in right-handed people.**
* **Plasticity of the brain – following brain injury other areas may take over functions performed by the damaged parts (e.g. right neglect much less common than left neglect for reason of the plasticity of the right hemisphere).**

(2)

1. Adam is undergoing a functional magnetic imaging (fMRI) scan. He is asked to perform some cognitive tasks during the fMRI scan.
   1. What substance in the bloodstream is detected by the fMRI scan?

**Oxygen**

**Or oxygenated vs deoxygenated haemoglobin**

(1)

* 1. What information about the functioning of the brain will the fMRI scan provide during the performance of the cognitive tasks?

**Which parts of the brain are using more oxygen/are more active.**

(1)

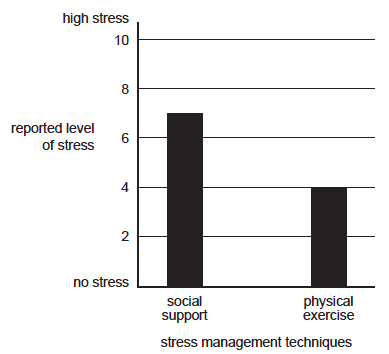
* 1. Name one other imaging technique that could be used to ﬁnd out similar information to the fMRI.

**Positron Emission Tomography / PET Scan**

(1)

1. Shannon, a psychology student, wanted to examine the effectiveness of physical exercise or social support on a person’s stress response. Stress is related to depression and other negative affect disorders. Shannon advertised her study in the local newspaper and invited readers to complete a questionnaire online.

The results of her study are graphed below.



*Figure 2*

Self-reported levels of stress of respondents who use social support or physical exercise as stress management techniques.

Referring to evidence from a previously conducted psychological study, explain the above graph.

**Studies by McCann and Holmes (1984) or Field, Diego and Sanders (2001) found that regular exercise is associated with decreased levels of depression. (1)**

**This could be due to increased levels of serotonin or dopamine. (1)**

(2)

1. A patient presents at Rockingham General Hospital in an agitated state and is experiencing a rapid heart rate and excess sweating. The emergency physician surmises that the patient has taken an illicit drug.
   1. Infer which drug the patient has taken.

**Methamphetamine / Ice / Crystal Meth (accept cocaine / ecstasy)**

(1)

* 1. Every drug can be classified by its mechanisms of action. Classify this drug according to its effects on the body and explain the presenting symptoms.

**Stimulant (1)**

**Speeds up the processes of the body, makes the heart rate beat faster and increased body temperature 🡪 sweating to lose heat (1)**

(2)

**Question Four (4 marks)**

Phineas Gage received an injury whilst working on a railway project.

1. Recall the lobe that sustained the damage.

**Left frontal lobe**

(1)

1. List two functions of this lobe

**Any two of the following: (1) each**

* **Higher mental abilities**
* **Control of socially unacceptable responses**
* **Control of movement**
* **Problem solving**
* **Long term memories (not task based)**

(2)

1. Initially, Gage’s personality changed. Explain why this occurred.

**Gage went from being amiable to uncouth and rude due to frontal lobe’s control of socially (1) unacceptable responses being affected due to damage.**

(1)

**Question Five (13 marks)**

1. Describe two (2) key ideas in Francis Galton’s (1869) theory of intelligence.

**A general ability (must have) (1)**

**One of the following: (1)**

* **showed itself in different ways in different environments (individual differences)**
* **hereditary / intelligence runs in families**
* **can be measured by level of success.**
* **could be measured by simple tests**

(2)

1. Recall the modification Spearman made to his 1904 theory of intelligence. Justify why Spearman (1945) altered his original theory of intelligence in 1945.

**Included s-factors (specific factors) (1)**

**Some intelligent people could score lower on a specific task (e.g. do well with mathematical tasks but poorly in linguistic based tasks). (1)**

(2)

1. According to Howard Gardner there are nine different types of intelligence. Name and describe any three (3) of these types of intelligence.

**1 mark for name. 1 mark for correct description**

**Any three of:**

* **Linguistic – use spoken and written language/ability to learn and use language**
* **Logical/mathematical – ability to analyse/solve problems and think scientifically**
* **Musical – Ability to perform and compose music, to appreciate rhythm, tone, pitch**
* **Bodily(kinaesthetic) – use of body or its parts to solve problems, coordination**
* **Spatial – Ability to use large and small spaces, to form and use visual images of objects**
* **Interpersonal – ability to understand the intentions, desires and thoughts of others**
* **Intrapersonal – ability to understand self and own thoughts, feelings and intentions**
* **Naturalistic – nurturing and relating information to one’s natural surroundings classifying natural forms such as animal and plant species**
* **Existential – ability to contemplate phenomena or questions beyond sensory data, such as the infinite and infinitesimal, spiritual or religious intelligence**

(6)

1. Psychologists use ‘group’ and ‘individual’ tests to measure intelligence. Identify **one (1)** individual empirically-based test that is used by psychologists to measure intelligence.Describe how this test is used to calculate an intelligence quotient score.

**WISC / WAIS / WPPIS (1)**

**Participants undertake a series of verbal and non-verbal tasks. These are then combined into two scales – Verbal IQ and Performance IQ (1)**

**These scores are combined to calculate a full scale IQ (1)**

(3)

**Question Six (15 marks)**

1. List two changes in cognition that can be experienced when a person has an altered state of consciousness.

**Any correct response acceptable for one mark each. Correct responses include, but are not limited to:**

* **Shift of attention/awareness**
* **Distorted perception/hallucination**
* **Lack of memory for the time / amnesia**
* **Changed sense of time**
* **Distorted thinking**
* **Increased suggestibility**

(2)

1. Name two physiological responses that can indicate a change in a state of consciousness. Outline how each physiological response is different in sleep compared with waking consciousness.

**Correct responses (any correct brief description acceptable)**

* **Electrical activity of the brain (1 mark)**
  + **Electrical activity is highest during waking consciousness / brain waves are fast and small shape of brain waves changes during different stages of the sleep cycle (or any specific example of these different kinds of brain waves (1 mark)**
* **Heart rate (1 mark)**
  + **Heart rate is faster during waking consciousness / slower during sleep (1 mark)**
* **Body temperature (1 mark)**
  + **Body temperature is higher in waking consciousness / lower during sleep (1 mark)**
* **Galvanic skin response (1 mark)**
  + **Galvanic skin response is higher during waking consciousness and lower during sleep (1 mark)**
* **Blood pressure (1 mark)**
  + **Lower during sleep (1 mark)**

(4)

1. A number of devices are often used to monitor sleep patterns in sleep clinics.

Name one of these devices, list what it measures, and clearly explain how its recordings can distinguish between rapid eye movement (REM) and non-rapid eye movement (NREM) sleep.

* 1. Name

**Electroencephalograph (accept EEG)**

(1)

* 1. Measure

**Movement of electricity across the scalp (do not accept brain waves)**

(1)

* 1. Explanation

**NREM sleep is indicated by higher amplitude and lower frequency brainwaves, whereas REM sleep is indicated by lower amplitude and higher frequency brainwaves.**

(1)

1. Holly has just obtained her driver’s licence, and is excited about being able to drive her own car. Holly understands that it would be extremely dangerous for her to drive her new car and talk on a mobile phone at the same time.

Explain, in terms of types of attention, why it is dangerous to carry out both tasks simultaneously?

**Driving is a complex task, a controlled process that requires selective attention. (1)**

**In attempting to perform these two tasks at once, Holly would be using divided attention (1) and would not be able to concentrate sufficiently on driving, thus causing danger.**

(2)

1. Wild chimpanzees in Africa have become ‘used to’ the people how make observations about them.
   1. Identify the psychological term for this process.

**Habituation (1)**

(1)

After some time, one of the chimps seemed to ‘notice’ the observer.

* 1. Identify the psychological term for this process.

**Dishabitatiion (1)**

(1)

* 1. Explain the underlying mechanisms required for the process named in question e., part ii.

**A change of stimulation was so intense causes that it caused the chimpanzee to pay attention. (1)**

(1)

* 1. Identify one situation when the Stroop Test would be inappropriate to use on a participant.

**Either:**

* + - **Poor literacy**
    - **Colour blindness**

(1)

**Question Seven (15 marks)**

1. Identify two reasons for delayed communication skills.

|  |
| --- |
| **Any two of the following:**  **Hearing impairment (1); autism (1); developmental delay (1);**  **disability (1); limited exposure (1).** |

(2)

1. Describe two interventions that may be used to help individuals with delayed and/or impaired communication skills.

**Intervention 1 – Use of cochlear implants (instead of hearing aids) with hearing impaired children (1) to enable them to be exposed to naturally occurring oral language and all its grammatical features from infancy. (1)**

**Intervention 2 – Highly-structured one-to-one early intervention programs (1) such as those used with children with autism to reinforce desirable behaviour, communication and social skills. (1)**

***NB* (1) for “appropriate” less detailed answer.**

(4)

1. Define ‘effective communication’.

|  |
| --- |
| **Communication that clearly communicates the information and intent of the message.** |

(1)

1. List two (2) characteristics of a listener that could affect effective communication.

|  |
| --- |
| **Any of the following or any other reasonable response accepted for *one mark each*. Examples of correct responses:**   * **Not listening to the speaker** * **Listener is distracted** * **Listener forms an impression of the speaker** * **Listener does not check for information** |

(2)

1. Explain two (2) non-verbal communication techniques that can portray a message.

**(1) for each point – must be explained (cause and effect).**

**Body language – how you position your body affects the message portrayed. Being open or closed can affect how a message is sent/received.**

**Gestures – Hand movements that portray a message. Some hand movements are aggressive or misunderstood affected the message being sent.**

**Facial expression – the expression of a face can portray emotions. Even though a person may be verbally giving one message, their face can say something else.**

**Physical distance – how close the interlocutors stand can portray a message. It can be used as a power technique.**

(2)

1. Identify two (2) of Robinson’s (2003) social skills and explain how they contribute to communication.

**1 mark for correctly identifying and 1 mark for the explanation for EACH skill.**

**Handshake**

**Allows the person to physically meet, face-to-face. Shows goodwill and friendship but can also tell a lot nature of the speaker.**

**Politeness**

**We appeal to the negative face -if you are making an imposition you need to apologise for this- or positive face-make someone like you.**

**Terms of address**

**Use of titles can range from formal to informal and shows relationship between the speakers.**

**End of Section Two**

**Section Three: Extended Answer (40 marks)**

This section contains two (2) questions. You must answer both questions.

Pages are included at the end of Question Ten for planning and writing your answers.

* Planning: If you use a page for planning, indicate this clearly at the top of the page.
* Answering the question: In the pages provided indicate clearly the number of the question you are answering.
* You should refer to relevant psychological concepts, theories and research in your answer.

**Question Nine (20 marks)**

*“What you see and what you hear depends a great deal on where you are standing. It also depends on what sort of person you are.” (C. S. Lewis, 1955).*

With reference to psychological theories and research, discuss the above quote with an emphasis on vision.

Your answer should include:

* Definitions of sensation and perception;
* References to visual stimuli and receptors;
* Explanations of visual perception
* Descriptions of visual illusions and distortions with reference to any relevant research.

*AND*

**Question Ten (20 marks)**

Ms Evans’ has noticed that the middle school students are currently experiencing an increase in the number of observed anti-social behaviours between boys and girls. She wishes to explain to her principal the underlying factors of these behaviours and propose how the school can promote liking and pro-social behaviours.

Your answer should include:

* Definitions and examples of anti- and pro-social behaviours;
* Explanations of relationship formation in adolescents with reference to relevant research;
* Strategies to reduce anti-social and promote pro-social behaviours.
* Strategies for increasing liking between individual students.

|  |  |
| --- | --- |
| **Definitions** | **3** |
| Provides psychological definitions of sensation and perception, elaborates on these in regards to the quote. | 3 |
| Provides a psychological definitions of sensation and perception and elaborates on these in general cognitive psychology. | 2 |
| Provides brief definitions of sensation and perception. | 1 |
| Makes general comments about sensation and perception. | 0 |
| **Visual Stimuli and Receptors** | **2** |
| Describes visual stimuli as light energy that varies in intensity and wavelength. Receptors are modified nerve cells–rods and cones–in the retina | 2 |
| Identifies visual stimuli as light. Receptors are rods and cones or the retina. | 3 -4 |
| No answer | 0 |
| **Visual Perception** | **6** |
| An extended answer with detailed references to **expectancy, form perception, depth/distance perception, motion perception and perceptual constancy**. Relates perception to position the viewer is in and their cognition. Uses empirical evidence to support assertions. | 5 - 6 |
| An extended answer with minimal (one or two), brief and/or inaccurate descriptions to **expectancy form perception, depth/distance perception, motion perception and perceptual constancy**. Attempts to relate perception to position the viewer is in and their cognition. Limited use of empirical evidence to support assertions. . | 3 -4 |
| Contains some generalisations and statements consistent with current psychological understandings or answer is a series of personal opinions or produces a short answer with or without making reference to empirical evidence. | 1 – 2 |
| No answer | 0 |
| **Visual Illusions** | **6** |
| An extended answer with detailed references to **two or more visual illusions**. Explains the illusions using **principles of perception**. Uses empirical evidence where relevant and meaningful to support explanations | 5 – 6 |
| An extended answer with references to **at least one visual illusion**. Inadequately explains the illusions using **principles of perception**. Uses empirical evidence where relevant and meaningful to support explanations | 3 – 4 |
| Contains some generalisations and statements consistent with current psychological understandings or answer is a series of personal opinions or produces a short answer with or without making reference to empirical evidence. | 1 – 2 |
| No answer | 0 |
| **Structure** | **3** |
| Well-constructed argument, well-developed sentences and paragraphs; uses appropriate psychological language with accurate spelling, grammar and paragraph structure. APA conventions adhered to. | 3 |
| Clear everyday language with adequate grammar, spelling, sentences and paragraph structures. Minor violations of APA conventions. | 2 |
| Poor literacy skills may interfere with the ability of the marker to understand the response (e.g. very poor spelling, grammar, very poor sentence and paragraph structure). Poor to little use of APA conventions. | 1 |
| Response is unable to be understood. | 0 |
| **Total** | **20** |

|  |  |
| --- | --- |
| **Definitions** | **3** |
| Provides psychological definitions of anti- and pro-social behaviours, elaborates with examples in regards to the quote. | 3 |
| Provides a psychological definitions of anti- and pro-social behaviours and elaborates on these in general social psychology. | 2 |
| Provides brief definitions of anti- and pro-social psychology. | 1 |
| Makes general comments about anti- and pro-social behaviours. | 0 |
| **Relationship formation** | **6** |
| Accurately uses Dunphy’s (1963) theory to explain how relationships form within adolescents. Relates this to the context of the question. | 5 – 6 |
| Describes Dunphy’s (1963) theory on relationship formation in adolescents. Attempts to relate this to the context of the question. | 3 – 4 |
| Contains some generalisations and statements consistent with current psychological understandings or answer is a series of personal opinions or produces a short answer with or without making reference to empirical evidence. | 1 – 2 |
| No answer | 0 |
| **Strategies to deal with anti- and pro-social behaviours** | **6** |
| An extended answer with detailed suggestions to reduce anti-social and increase pro-social behaviours. Relates these to underlying psychological processes about underlying causes. Uses empirical evidence to support assertions. | 5 – 6 |
| An extended answer with minimal (one or two), brief and/or inaccurate descriptions of suggestions to reduce anti-social and increase pro-social behaviours. Attempts to relate these to underlying psychological principles. Limited use of empirical evidence to support assertions. . | 3 -4 |
| Contains some generalisations and statements consistent with current psychological understandings or answer is a series of personal opinions or produces a short answer with or without making reference to empirical evidence. | 1 – 2 |
| No answer | 0 |
| **Determinants of liking** | **2** |
| Describes the determinants of liking (proximity, reciprocity and similarity) and relates these to strategies to increase liking. | 2 |
| Contains some generalisations about liking and poorly attempts to relate these to strategies to increase liking. | 1 |
| No answer | 0 |
| **Structure** | **3** |
| Well-constructed argument, well-developed sentences and paragraphs; uses appropriate psychological language with accurate spelling, grammar and paragraph structure. APA conventions adhered to. | 3 |
| Clear everyday language with adequate grammar, spelling, sentences and paragraph structures. Minor violations of APA conventions. | 2 |
| Poor literacy skills may interfere with the ability of the marker to understand the response (e.g. very poor spelling, grammar, very poor sentence and paragraph structure). Poor to little use of APA conventions. | 1 |
| Response is unable to be understood. | 0 |
| **Total** | **20** |

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