



## **GENERAL COMMENTS**

Students generally performed well on the June 2008 Psychology examination, with results being slightly superior to those for examination 1 in previous years. As usual, the scores in the multiple-choice section were higher than those in the short answer section.

In the multiple-choice section all three Areas of Study were well answered. The mean score for both 'Visual perception' and 'Brain and nervous system' was 76 per cent. As in 2007, 'States of consciousness' was the most accurately answered section, with a mean score of 86 per cent. The mean scores for all Areas of Study were higher than in 2007.

As in previous years, students who did not perform well on the short answer section wrote answers that often lacked precision and completeness in their descriptions and definitions, failed to refer to appropriate psychological information or failed to provide appropriate examples in their answers (even when the requirement for this was explicitly stated in the question). Students had the most difficulty with 'Visual perception', with a mean score of 58 per cent, while 'Brain and nervous system' had a mean score of 64 per cent and 'States of consciousness' was the best answered Area of Study with a mean score of 68 per cent.

In general, students demonstrated good knowledge and understanding of the key concepts and skills in the study design, though it was noted that in many of the questions where a specific context was stipulated, students ignored the instruction and gave general answers that did not obtain full marks (see individual question analyses below). As in previous years, many students did not achieve full marks because they failed to address all aspects of the question in their answer. This was particularly true in Question 3, where the instruction 'In terms of **research**' was ignored, and Question 11, where the scenario of the 'market scene' was required. Many answers contained only generic descriptions.

Students need to read the short answer questions very carefully and then check their answers against the requirements of the question. Highlighting the **command terms** before planning a response is good practice, and can help keep answers focused.

Short answer questions worth two marks generally require two key terms and/or pieces of information. Short answer questions worth one mark generally require one, or sometimes two, key terms and/or pieces of information. Questions worth three or four marks have an appropriate number of lines in the answer booklet. It is worth noting, however, that the space provided for answers should be regarded as a guideline only and it is entirely permissible for students to write in the margins or in blank spaces on the paper as long as such writing is **clearly identified** as being an answer to a specific question.

## **SPECIFIC INFORMATION**

### **Section A – Multiple-choice questions**

Students should answer all questions in the multiple-choice section of the paper. If they are unsure of the response, they should mark the response that is their 'best guess' – it is always possible to change a response by carefully erasing and re-shading; no marks are lost for incorrect answers. Answering all questions also decreases the chance that further answers will be out of synchronisation.

This section of the paper was very well answered with only three questions resulting in a correct response rate of less than 50 per cent. These questions are discussed below.

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The table below indicates the percentage of students who chose each option. The correct answer is indicated by shading.

| Question                                          | % A | % B | % C | % D | Comments                                                                                                                                                                                                                    |
|---------------------------------------------------|-----|-----|-----|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Area of Study 1 – Brain and nervous system</b> |     |     |     |     |                                                                                                                                                                                                                             |
| 1                                                 | 3   | 96  | 1   | 0   |                                                                                                                                                                                                                             |
| 2                                                 | 6   | 3   | 1   | 91  |                                                                                                                                                                                                                             |
| 3                                                 | 9   | 15  | 72  | 4   |                                                                                                                                                                                                                             |
| 4                                                 | 76  | 12  | 4   | 8   |                                                                                                                                                                                                                             |
| 5                                                 | 73  | 4   | 22  | 2   |                                                                                                                                                                                                                             |
| 6                                                 | 3   | 19  | 72  | 6   |                                                                                                                                                                                                                             |
| 7                                                 | 18  | 3   | 69  | 10  |                                                                                                                                                                                                                             |
| 8                                                 | 18  | 1   | 3   | 78  |                                                                                                                                                                                                                             |
| 9                                                 | 16  | 75  | 7   | 2   |                                                                                                                                                                                                                             |
| 10                                                | 86  | 2   | 8   | 4   |                                                                                                                                                                                                                             |
| 11                                                | 9   | 61  | 18  | 12  |                                                                                                                                                                                                                             |
| 12                                                | 3   | 91  | 2   | 3   |                                                                                                                                                                                                                             |
| 13                                                | 5   | 5   | 9   | 80  |                                                                                                                                                                                                                             |
| 14                                                | 45  | 6   | 44  | 5   | Saliva production is in fact inhibited in sympathetic arousal, thus option C was the only correct answer.                                                                                                                   |
| 15                                                | 43  | 24  | 15  | 18  | Wrong answers were fairly evenly distributed among the three incorrect options. Students who answered option B were perhaps confused as the features were the exact opposite of what would really occur in Broca's aphasia. |
| 16                                                | 87  | 11  | 1   | 1   |                                                                                                                                                                                                                             |
| 17                                                | 4   | 0   | 92  | 4   |                                                                                                                                                                                                                             |
| 18                                                | 82  | 6   | 4   | 8   |                                                                                                                                                                                                                             |
| <b>Area of Study 2 – Visual perception</b>        |     |     |     |     |                                                                                                                                                                                                                             |
| 19                                                | 80  | 2   | 8   | 10  |                                                                                                                                                                                                                             |
| 20                                                | 12  | 8   | 74  | 6   |                                                                                                                                                                                                                             |
| 21                                                | 7   | 66  | 17  | 9   |                                                                                                                                                                                                                             |
| 22                                                | 1   | 2   | 13  | 85  |                                                                                                                                                                                                                             |
| 23                                                | 3   | 12  | 84  | 1   |                                                                                                                                                                                                                             |
| 24                                                | 16  | 8   | 75  | 1   |                                                                                                                                                                                                                             |
| 25                                                | 83  | 10  | 4   | 3   |                                                                                                                                                                                                                             |
| 26                                                | 6   | 1   | 82  | 10  |                                                                                                                                                                                                                             |
| 27                                                | 13  | 77  | 10  | 0   |                                                                                                                                                                                                                             |
| 28                                                | 48  | 14  | 8   | 29  | Students showed some confusion as to the features of the Ames room.                                                                                                                                                         |
| 29                                                | 7   | 76  | 12  | 4   |                                                                                                                                                                                                                             |
| 30                                                | 4   | 3   | 2   | 91  |                                                                                                                                                                                                                             |
| 31                                                | 12  | 2   | 1   | 85  |                                                                                                                                                                                                                             |
| <b>Area of Study 3 – States of consciousness</b>  |     |     |     |     |                                                                                                                                                                                                                             |
| 32                                                | 99  | 0   | 1   | 0   |                                                                                                                                                                                                                             |
| 33                                                | 1   | 1   | 97  | 0   |                                                                                                                                                                                                                             |
| 34                                                | 11  | 83  | 4   | 3   |                                                                                                                                                                                                                             |
| 35                                                | 4   | 8   | 76  | 11  |                                                                                                                                                                                                                             |
| 36                                                | 2   | 96  | 1   | 2   |                                                                                                                                                                                                                             |
| 37                                                | 11  | 71  | 4   | 14  |                                                                                                                                                                                                                             |
| 38                                                | 1   | 7   | 84  | 8   |                                                                                                                                                                                                                             |
| 39                                                | 15  | 2   | 81  | 2   |                                                                                                                                                                                                                             |
| 40                                                | 85  | 12  | 2   | 1   |                                                                                                                                                                                                                             |
| 41                                                | 12  | 2   | 79  | 7   |                                                                                                                                                                                                                             |
| 42                                                | 4   | 1   | 91  | 3   |                                                                                                                                                                                                                             |
| 43                                                | 11  | 86  | 2   | 1   |                                                                                                                                                                                                                             |
| 44                                                | 3   | 0   | 3   | 94  |                                                                                                                                                                                                                             |



## Section B – Short answer questions

For each question, an outline answer (or answers) is provided. In some cases the answer given is not the only answer that could have been awarded marks.

### Area of Study 1 – Brain and nervous system

This section was generally well answered.

#### Question 1

| Marks | 0 | 1 | 2  | Average |
|-------|---|---|----|---------|
| %     | 5 | 7 | 89 | 1.9     |

Visual cortex; occipital

This question was very well answered.

#### Question 2

| Marks | 0 | 1  | 2  | Average |
|-------|---|----|----|---------|
| %     | 9 | 52 | 39 | 1.3     |

Wernicke's area:

- stores the receptor codes for language **or** enables comprehension of speech/language
- enables interpretation of the written word
- locates words from memory to express a particular meaning
- creates meaningful and/or grammatically correct speech.

Any one of the above functions gained one mark each.

#### Question 3a.

| Marks | 0  | 1  | Average |
|-------|----|----|---------|
| %     | 78 | 22 | 0.2     |

The lack of control over the variables means (either of):

- a cause and effect relationship between variables cannot be established
- a variable other than the independent variable may influence the value of the dependent variable.

The instruction 'in terms of research' was not taken into account by many students.

#### Question 3b.

| Marks | 0  | 1 | Average |
|-------|----|---|---------|
| %     | 95 | 5 | 0.1     |

Case studies provide detailed information about an individual or event that can be used to propose hypotheses or theories about the brain and behaviour.

The instruction 'in terms of research' was not taken into account by almost all students in this part.

#### Question 4a.

| Marks | 0  | 1  | Average |
|-------|----|----|---------|
| %     | 19 | 82 | 0.8     |

Appropriate answers included:

- ESB is invasive
- there are risks with surgical procedures such as ESB
- ESB can only be performed on people already undergoing open brain surgery, so the sample is not representative of the population
- no two brains are exactly alike, which makes it difficult to obtain a map of the brain beforehand to avoid damaging key areas of the brain
- this is a form of case study and generalisation from case studies is low in validity
- modern advances in technology mean that there are now far more accurate methods of obtaining the same information.

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One mark was awarded for any of the above responses.

## Question 4b.

| Marks | 0  | 1  | Average |
|-------|----|----|---------|
| %     | 24 | 76 | 0.8     |

Alternative methods include:

- fMRI
- PET-scan.

## Question 5a.

| Marks | 0  | 1 | 2  | Average |
|-------|----|---|----|---------|
| %     | 17 | 5 | 78 | 1.6     |

Shock; countershock

## Question 5b.

| Marks | 0  | 1  | 2  | Average |
|-------|----|----|----|---------|
| %     | 54 | 15 | 32 | 0.8     |

In 'shock' (the first phase) the body's ability to deal with the stressor is lower than usual. In 'counter shock' (the second phase) the body's ability to resist the stressor increases to be at and then above normal level.

Marks were awarded for any response that indicated a decline in resistance followed by recovery.

## Question 6a.

| Marks | 0  | 1  | Average |
|-------|----|----|---------|
| %     | 20 | 80 | 0.8     |

Parasympathetic

No other term was acceptable.

## Question 6b.

| Marks | 0  | 1  | 2  | Average |
|-------|----|----|----|---------|
| %     | 26 | 11 | 63 | 1.4     |

Appropriate changes included (any two of):

- heart rate returns to normal/reduces
- breathing rate returns to normal/reduces
- release of sugar into bloodstream is minimised
- digestion of food is stimulated
- pupils constrict
- production of adrenaline/cortisol (stress hormones) is minimised.

Any other reversal of a sympathetic nervous system (physiological change) and any other reversal of a physical response to a stressor (for example, trembling hands become still, quavering voice levels out) were also accepted.

The stem of the question clearly referred to the point in time at which the parasympathetic nervous system had taken over; responses that described autonomic arousal were therefore incorrect. Responses indicating that 'after his heart rate had increased ... it then began to slow down...' were accepted.

## Question 7a.

| Marks | 0  | 1  | 2  | Average |
|-------|----|----|----|---------|
| %     | 16 | 35 | 49 | 1.3     |

The graph would show a higher response when Nick was asked a relevant question. It is assumed that Nick had an arousal response to the relevant question and is therefore guilty.

This question was worth two marks and there were two clear points to be made. Many responses did not indicate why the police assumed he was lying – as required by the question.

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## Question 7b.

| Marks | 0  | 1  | Average |
|-------|----|----|---------|
| %     | 33 | 67 |         |

The increased emotional response may have been because of:

- anxiety
- varying temperature in the room
- illness (fluctuating body temperature).

A significant number of students incorrectly answered the question as if it asked how Nick could have created an artificial baseline level or how he could have calmed himself down so that he did not appear guilty.

## Area of Study 2 – Visual perception

Of the three Areas of Study in the short answer section, this was the area with the lowest mean. The relatively poor marks for Question 11 emphasise the need for students to apply their answers to the specific question as set. Students should not make generic statements where they are required to apply a concept.

## Question 8a.

| Marks | 0  | 1  | Average |
|-------|----|----|---------|
| %     | 43 | 57 |         |

Either of:

- Sasha's hand is close enough for each retina to view the hand at a slightly different angle. Therefore, the image of her hand is slightly different on each retina and this leads to the hand 'jumping' compared to the background (which is further away and therefore projects a similar image onto each retina)
- Sasha's eyes are about seven centimetres apart and therefore an object within seven or eight metres of the viewer will show retinal disparity.

Students were awarded the mark simply for identifying the role of retinal disparity.

## Question 8b.

| Marks | 0  | 1  | 2  | Average |
|-------|----|----|----|---------|
| %     | 34 | 45 | 21 |         |

Either of:

- retinal disparity: the greater the difference (or movement) of Sasha's hand between retinal images, the closer Sasha's hand is to her eyes
- convergence: the brain senses the tension in the muscles that inwardly turn the eyes to keep her hand centred in the retina of each eye. The greater the inward turning, the closer the object.

A surprising number of students named 'convergence' but then described 'accommodation'.

## Question 9

| Marks | 0  | 1  | 2  | Average |
|-------|----|----|----|---------|
| %     | 38 | 23 | 40 |         |

Orientation constancy is where an object appears to remain upright or in true position, despite being viewed from different angles or positions, and therefore the image having a different position on the retina. Examples include a child hanging upside down on a swing and still viewing their surroundings as the right way up, or lying on the couch to watch television and still perceiving the television as upright.

This question was not well answered because students were often unable to differentiate 'orientation constancy' from the other constancies studied.

Many students referred to 'orientation constancy' without explaining the term 'orientation' – this is a classic example of a case where a term must **not** be used as part of its own definition.

## Question 10

| Marks | 0  | 1  | 2  | Average |
|-------|----|----|----|---------|
| %     | 18 | 44 | 38 |         |



Appropriate answers included:

- similarity: if the door is similar in pattern/colour to the background, then the door and background will be perceived as belonging together as one unit
- figure-ground: the outline of the door needs to be disguised as the door is blended into the background of the wall. The door and the wall do not have a perceived contour between them.

It was essential that responses to this question showed the students' ability to apply their understanding of the Gestalt principles to the specific context given in the question. Too many students gave generic answers showing **knowledge** of the principles but failing to demonstrate **understanding** by applying them in the context as required.

## Question 11

| Marks | 0  | 1  | 2  | 3  | 4  | Average |
|-------|----|----|----|----|----|---------|
| %     | 25 | 13 | 25 | 12 | 25 | 2.0     |

Relative size

- The artist could draw images of similar-sized objects (for example, people and stalls) larger for them to be perceived as closer, or smaller to be perceived as more distant.
- The object is compared with other familiar objects and depth is judged based on knowledge of the size of the object and how it relates to surrounding objects. A person is known to be bigger than a stall table. Since the image of the table is bigger than the person, the person must be further away.

Height in the visual field

- More distant stalls will be shown as closer to the horizon in the picture than the closer stalls.

It was essential that responses to this question showed the students' ability to apply their understanding of the depth perception principles to the specific context given in the question. Too many students gave generic answers showing **knowledge** of the principles but failing to demonstrate **understanding** by applying them in the context as required.

## Question 12

| Marks | 0  | 1  | 2  | 3  | Average |
|-------|----|----|----|----|---------|
| %     | 22 | 12 | 12 | 54 | 2.0     |

Prior experience

- Emma-Jane may spend a lot of time around young women who dress very stylishly and therefore she is predisposed to perceiving young women.
- Kirk may spend a lot of time with his elderly grandmother and is therefore predisposed to perceiving an old woman.

The most appropriate factors to use in this response were 'previous experience' (experience or personal experience) and context. These were the most common as they are in the study design. Other possibilities included:

- motivation
- emotion
- situation
- culture
- instruction.

Many students confused 'context' and 'prior experience' – the 'Rat-Man' experiment is in fact an example of 'prior experience'

## Area of Study 3 – States of consciousness

Students appeared to have a good knowledge of this Area of Study. However, it is emphasised that students should be aware of elements that distinguish altered states of consciousness from normal waking consciousness.

## Question 13

| Marks | 0  | 1  | Average |
|-------|----|----|---------|
| %     | 18 | 82 | 0.8     |

Consciousness/state of consciousness

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‘Normal waking consciousness’ and ‘altered state of consciousness’ were too specific.

## Question 14a.

| Marks | 0  | 1  | 2  | Average |
|-------|----|----|----|---------|
| %     | 11 | 29 | 60 | 1.5     |

Appropriate effects included (any two of):

- sleepiness
- aches and pains in body
- fatigue
- micro-sleeps
- hand tremors
- drooping eyelids
- difficulty focusing eyes
- lack of energy and strength
- slurred speech
- increased sensitivity to pain
- slower heart rate and respiratory rate
- drop in body temperature
- slower reaction time.

Marks were awarded only for **physical** effects.

## Question 14b.

| Marks | 0  | 1  | 2  | Average |
|-------|----|----|----|---------|
| %     | 10 | 33 | 57 | 1.5     |

Appropriate effects included (any two of):

- lack of concentration
- shorter attention span
- irritability/moodiness
- anxiety
- lack of motivation
- impaired memory processes
- depression
- delusions
- paranoia
- decline in ability to perform simple tasks
- irrational/illogical thinking.

Marks were awarded only for **psychological** effects. ‘Hallucinations’ was not accepted as these relate to prolonged sleep deprivation of longer duration – three days or more.

## Question 14c.

| Marks | 0  | 1  | Average |
|-------|----|----|---------|
| %     | 33 | 67 | 0.7     |

None

This was the only response required.

## Question 15

| Marks | 0 | 1  | 2  | Average |
|-------|---|----|----|---------|
| %     | 8 | 30 | 62 | 1.6     |

An appropriate example could be washing dishes and singing along to the radio. They can be done together because one or more of the tasks has become an **automatic process** (it does not need a lot of mental effort and is well practiced).

The example had to suggest two tasks, one of which was not complex. Many students referred to ‘driving a car and talking on a mobile phone’. While talking is not complex, it is emphasised that research has shown that it is **not** possible

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to perform these tasks at the same time without losing proficiency in either or both of them – even if using a hands-free phone.

## Question 16a.

| Marks | 0  | 1 | 2  | Average |
|-------|----|---|----|---------|
| %     | 15 | 6 | 79 | 1.7     |

Low; high

Lower and higher were also accepted.

## Question 16b.

| Marks | 0  | 1  | 2  | Average |
|-------|----|----|----|---------|
| %     | 19 | 46 | 35 | 1.2     |

Appropriate answers included (any two of):

- non-REM sleep
- regular (slow) heartbeat
- slow (rhythmic) respiration
- low levels of metabolic activity
- little muscle activity
- very little dreaming (bizarre and disjointed dreams)
- possible occurrence of night terrors
- it is very hard to awaken a sleeper from Stage 4 sleep.

Although sleepwalking is more likely to occur in Stage 3 of non-REM sleep, it was credited as a correct response as several textbooks do not differentiate Stages 3 and 4. Sleep talking was **not** accepted as this can occur during any stage of sleep.

## Question 17a.

| Marks | 0  | 1  | Average |
|-------|----|----|---------|
| %     | 66 | 34 | 0.4     |

Independent Groups

No other answer was acceptable.

## Question 17b.

| Marks | 0  | 1  | Average |
|-------|----|----|---------|
| %     | 57 | 43 | 0.4     |

Acceptable responses included either of:

- a single-blind procedure is used to avoid the effect where participants' expectations may affect the performance (placebo effect) as the participants are 'blind' as to whether they are in the control or experimental group
- if the experimenter is 'blinded', then the effects of the experimenter's expectations will be eliminated.

The key terms here were 'expectations' or 'bias'.