

# COGNITION AND EMOTION

Resit Exam Preparation and Revision Focus

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## Exam Details

- TWO HOUR ON-CAMPUS** written exam
- July 2023 – Specific Date, Time, and location to be confirmed by Registry
- Ensure to bring a pen and your student ID
- On the desk in the exam, you will have the question sheet and an answer booklet



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## Exam Details

- Must arrive on time as late entry is not permitted
- If you miss the exam, due to extenuating circumstances, you should complete the University extenuating circumstances form through your MyTSD student portal in the usual way as for coursework assignments.

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## General Exam Information

- Exam is worth 50% of overall **module** mark
- The other 50% comes from your essay mark
- Both combined gives your average module mark (must be over 40% to pass the module)
- Exam is composed of four **essay style** questions
  - You choose **TWO questions** to answer
  - Each question is worth 50% of the **exam** mark



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## Suggested Revision Plan

### *Suggested plan for Exam Preparation*

| Task and what it entails                                                                                                                                                                                                                                                                                                                                                    | Time assigned for task                                                                                                                                                                                                                                                               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Revision:- <ul style="list-style-type: none"><li>• Identify topics to focus on from the revision guidance</li><li>• Review content (slides, recordings, materials) on Moodle</li><li>• Read through session notes</li><li>• Find and read info on the topics from core texts and journal articles</li><li>• Take notes and write out information while you revise</li></ul> | 56 hours remaining from allotted independent study time for the module to devote to preparing for the exam.<br><br>You may feel you need to spend more time than this on revision.<br><br>Therefore, it is up to you to ensure you have spent the time needed to prepare thoroughly. |

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## Exam Preparation

- Based on revision focus areas, you should gather information and develop essay plans
- Engage in extensive reading (books and journal articles) to develop outline of your answers
- Could even start writing out practice essays on topic areas, then tailor contextual information specifically to the questions in the exam



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## Exam Information

- Think carefully about what the question is asking you to do.
- Think carefully about what the question is asking you to include – take your time to answer the questions.
- Can you link information from other topic areas from the module series to produce a well-rounded answer?
- **Must** include citations throughout your answers
  - Adhering to **strict** APA formatting
- **No need for a reference list!!**

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## Exam Information

- Lecture slides serve only as a reminder of lecture content and useful reading.
- They do not substitute your own lecture notes.
- Nor are they sufficiently comprehensive to substitute for wider reading.
- For the exam you are expected to....
  - Write grammatically correct sentences.
  - Write in appropriate paragraphs.
- Thus, you need to read further than lecture slides
  - As these often provide only bullet points/phrases/words as memory aids.

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### Strong Answer

- Provide a detailed description of the theory/model or topic in question.
- Explain the meaning of any specific terms.
- Goes beyond the lecture notes and shows evidence of wider reading.
- Include empirical evidence and discuss the studies mentioned.
- Provide relevant integration, critical analysis and evaluation of arguments.
- Identify strengths and weaknesses associated with each theory based on relevant studies and would clearly explain what the findings mean for theory.
- Consider thoughts on wider implications.

## Exam pointers

Regardless of the topic area, or questions you choose to answer, your mark will depend on the type of answer you give

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## Essential Reading

- Eysenck, M. W., & Keane, M. T. *Cognitive psychology: A student's handbook*.
- Power, M., & Dagleish, T. *Cognition and emotion: From order to disorder*. Psychology Press.

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## Reading for the Exam

- Where to find additional empirical evidence:
- If there is a citation not in the core text, use library search to find the article.
- Links to journal papers have been provided on Moodle.
- Engage in your own literature searching in the same way as you would for an essay.
- Make use of the Eysenck and Keane Cognitive Psychology Companion Website.

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## Moodle

- Revision worksheets on Moodle to help focus your revision on certain elements within a topic area, and to give you an idea of the type of information that should be covered.
- Past exam papers also available on Moodle
- The example past papers will provide an idea of the type of questions and manner the questions could be asked in relation to the module topic areas.

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## Revision Focus Guidance

- The information provided on the slides below are of topic areas and **NOT** questions.
- Whilst a question may relate to an area, it will focus on a specific element and **NOT** be a 'write everything about it'.
- Therefore, you must prepare thoroughly for the exam.
- Use of lecture slides alone is **NOT** going to be sufficient, where you must include relevant evidence from empirical research in your answers.

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## Revision Focus

1. Cognitive Neuroscience
2. Computational Cognitive Science
3. Emotion and Memory
4. Amygdala, emotion, and Cognition

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## 1. Cognitive Neuroscience

- What is Cognitive Neuroscience
- Key terminology
- Organisation of the brain
- Techniques for studying the brain
- Strengths
- Limitations

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## 1. Cognitive Neuroscience

- Studying the brain, in detail
- Hemispheres, lobes, anatomical directions, Brodmann's Cytoarchitectonic map, etc.
- Techniques for studying the brain: Single-unit recordings, EEG, ERPs, CT, PET, MRI, fMRI, efMRI, MEG, TMS.
  - Need to know what each of these involve
- Strengths: resolve theoretical debates
  - Support from research by Wild et al. (2012):

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## 1. Cognitive Neuroscience

- Strengths: Further evidence by Kosslyn (2005) + meta-analysis by Kosslyn and Thomas (2003).
- Strengths: Neuroimaging evidence also help with theoretical debate – e.g., ERP for attention (Deutch & Deutch).
- Strength: enables construction of cognitive models
- Strength: self-correcting approach
- Strength: acknowledges functional specialisation and integration

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## 1. Cognitive Neuroscience

- Limitations: Relies on reverse inference – see work of Brown (2012); Sander (2009); Lindquist et al. (2012)
- Does brain imaging actually tell us anything about cognition?
  - Gap between physical and psychological processes
  - Brain-imaging techniques only reveal associations
    - Correlational not causation
- Limitations: Low ecological validity
- Underpowered
- Prone to false positives
- Bennett et al. (2009):
  - fMRI of **dead** salmon showed brain activity when it was presented with pictures of people.
- What is an appropriate baseline from which to measure activity?

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## 2. Computational Cognitive Science

- Makes use of computational modelling
  - Try to understand the human mind through examining how a computer carries out functions.
    - Relies on the computer metaphor
    - Encoding & coding, Information-processing, Channel capacity, Retrieval & output
    - Hardware and software +Serial vs. parallel processing comparisons between humans and computers
  - Cognitive modelling: levels = semantic, symbol processing, physical

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## 2. Computational Cognitive Science

- Cognitive Models: computations, operating principles, control structure, processing codes, functional architecture
  - Examples = Spreading activation vs. connectionist
  - General cognitive architecture models – e.g., SOAR, ACT\*
- Artificial intelligence
  - Turing test,
  - Eliza,
  - Searle's Chinese room argument

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## 2. Computational Cognitive Science

- Strengths: overarching framework, links with other approaches, needs depth and clarity to theories, new models can be developed.
- Limitations: Bonini's paradox, difficult to falsify, too general, most models ignore motivational and emotional factors, errors in programming code, embodied cognition

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### 3. Emotion and Memory

- Mood Congruity
- Methods to investigate emotion & memory
- Research evidence
- The Encoding-specificity principle
- Mood-state-dependent memory
- Effects of positive and negative emotion on memory

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### 3. Emotion and Memory

- Mood Congruity: people tend to remember negative memories when in a negative mood, and happy memories when in a positive mood.
- We learn and retrieve information better when the affective value of the material matches our mood state.
- Typical set-up of memory research:
  - Study → Distractor → Test
  - Test phase can either include recall or recognition

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### 3. Emotion and Memory

- Research evidence:
  - Hills et al. (2011):
    - Three experiments (induced different emotions, viewed faces showing different emotions & learnt either incidentally or intentionally).
- However, mood congruity effect with autobiographical memory not seen as often when people were in a negative mood: Holland and Kensinger (2010).
  - Emotion regulation reduces negative mood
  - Research evidence from Rusting and DeHart (2000)

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### 3. Emotion and Memory

- Encoding-specificity principle: memory is better when retrieval context is same as during learning.
  - Both internal and external
  - Danker and Anderson extend this to brain states
  - Evidence: Lewis et al. (2005): different parts of the brain become active when in positive vs. negative learning and retrieval context.
- Mood-state-dependent memory: Memory is better when mood state at retrieval matches same mood state at learning
  - Evidence: Kenealy (1997): Mood-state-dependent memory found in free recall but not cued recall.

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### 4. Amygdala, Emotion and Cognition

- Amygdala and Fear Conditioning
  - LeDoux and colleagues: Lesions of the amygdala block fear conditioning.
- The amygdala receives input from all sensory systems.
- Appears to be responsible for adding emotional significance to other stimuli.
- Amygdala projects to brainstem regions that control emotional behaviour output.
  - Links to the Limbic System

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### 4. Amygdala, Emotion and Cognition

- LeDoux(1998) has gathered considerable evidence for two pathways in the processing of fear
  - The fast route, quick, inaccurate, life saving:
    - Sight → Thalamus → Amygdala
  - The slow route, precise, complex, sluggish:
    - Sight → Thalamus → Visual cortex → Amygdala
- One allows for instant action and is relatively inaccurate so is liable to false positives
- Whilst the other is more precise and can reduce fear response if the situation is deemed to be safe after all

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## 4. Amygdala, Emotion and Cognition

- Role of Amygdala: Associated with many emotions
- Acts as a *hub* with many connections to up to 90% of other cortical areas in the brain.
- Murty et al. (2010): meta-analysis
- Evidence from patients with damage to amygdala
  - Adolphs et al. (2005): patients had poor memory for gist of emotional expressions & did not focus on eye area
  - Patients with Urbache-Wiethe disease
  - Kluver-Bucy syndrome

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## 4. Amygdala, Emotion and Cognition

- Amygdala connects to key areas that deal with memories – e.g., hippocampus, but cognitive processes should also be considered.
- I.e., memory biases: implicit and explicit
  - Thought to be linked with anxiety and depression
  - However, mixed results from research: Williams et al. (1997) vs. Mitte (2008)
  - Possible explanation: difference in memory task used at test.
  - Also, difficult to know if memory bias leads to anxiety/depression or vice versa.

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**REVIEW EXAM  
PROFORMA ON MOODLE**

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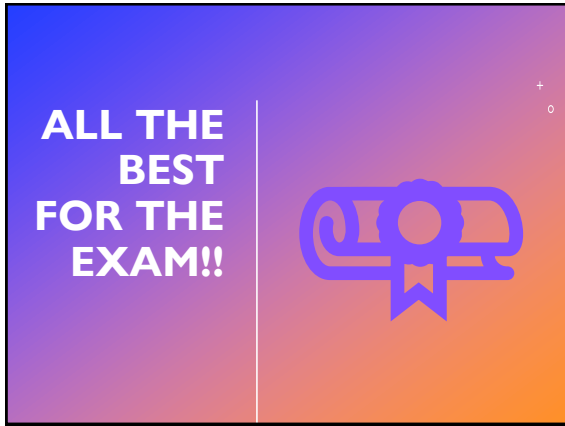
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