Example Exam Questions - Course Cognition & Emotion 2017-2018

Multiple choice questions

1 (Matlin, Chapter 1)

In the information-processing approach:

a. principles of Gestalt psychology are applied to the scientific study of overt behavior.
b. a mental process can be understood by comparison with the operations of a computer.
c. introspection, one of the oldest techniques in psychology, is the best research technique.
d. a mental process always involves conscious problem solving and decision making.

Answer: b

2 (Matlin, Chapter 2)

Change blindness and inattentional blindness are similar because both of these phenomena

a. demonstrate the importance of top-down processing.
b. emphasize the importance of bottom-up processing.
c. illustrate categorical perception.
d. provide support for the recognition-by-components approach to perception.

Answer: a

3 (Matlin, Chapter 3)

Suppose that you are looking for a dark-colored car in a row of parked cars. Eleven of them are light colored, and one is dark colored. The dark-colored car seems to pop out. In this example,

a. you are using focused attention.
b. you are using bottom-up processing.
c. you are demonstrating the feature-present/feature-absent effect.
d. a dark-colored object is more likely to stimulate the movement-detection cells in the retina.

Answer: b

4 (Matlin, Chapter 4)

Suppose that you have been watching a figure skating competition. You close your eyes and you try to remember how the last skater performed her final jump, then glided to the center of the rink and finished with a spin. The component of your working memory that is now most active is

a. the phonological loop.
b. the visuospatial sketchpad.
c. the episodic buffer.
d. the central executive.

Answer: b
5 (Matlin, Chapter 5)

The levels-of-processing approach

a. states that we remember material better if we encode it in terms of sensory characteristics.
b. states that deeper processing of material usually leads to more permanent retention.
c. emphasizes the difference between short-term memory and long-term memory.
d. emphasizes that the best way to learn something is to repeat it over and over.

Answer: b

6 (Matlin, Chapter 11)

According to the introduction to the section on problem understanding,

a. understanding occurs when we have evolved an external representation for an internal problem.
b. a primary criterion for understanding is the ability to represent the problem in matrix form.
c. attention is necessary for problem solution, but it is not essential for problem understanding.
d. understanding requires a close correspondence between the situation you need to understand and your own internal representation.

Answer: d

7 (Lecture 3 - Applications: Affective Computing)

What is the definition of Affective Computing?

a. Computing that relates to, arises from, or deliberately influences emotion and other affective phenomena.
b. Study of how to generate emotions in computers.
c. Study of whether it is good to make computers with human-like cognition and emotion.
d. An interdisciplinary research area with connections to computer science, psychology, cognitive science, neuroscience, sociology and ethics.

Answer: a

8 (Lecture 9 - Emotion Recognition and Generation)

Which of the statements below is correct?

a. FACS is the Body Animation Coding System developed by Paul Ekman.
b. MPEG-4 FDPs is composed of Action Units that are the building blocks of facial movements.
c. MPEG-4 FAPs are mainly developed for the dance movement analysis.
d. FAPUs are the distance between key facial features on a specific face and are used to scale FAPs to any face.

Answer: d

9 (Lecture 9 - Emotion Recognition and Generation)

Which of these statements about ECG signals is not correct?
a. Distance between two successive R peaks is called the heart rate.
b. ECG signals are composed of QRS complexes.
c. The variation between R-R intervals is called Heart Rate Variability (HRV).
d. Heart rate variability is a better measurement of the Sympathetic Nervous System (SNS) than the heart rate.

Answer: a

10 (Lecture 10 - Virtual Reality and Presence)

Below are the properties of immersion. Which of them is not correct?

a. Extensiveness is the range of sensory modalities presented to the user (e.g., visuals, audio, and physical force).
b. Vividness is the quality of energy simulated (e.g., resolution, lighting, frame rate, audio bitrate).
c. Interactability is the congruence between sensory modalities (e.g., appropriate visual presentation corresponding to head motion and a virtual representation of one’s own body).
d. Surroundness is the extent to which cues are panoramic (e.g., wide field-of-view, spatialized audio, 360◦ tracking).

Answer: c

11 (Lecture 10 - Virtual Reality and Presence)

What is vection?

a. It is the visually induced motion sickness resulting from immersion in a computer-generated virtual world.
b. It is the illusion of self-motion; for example, feeling of moving backwards when a car passes by while you are stationary in the car.
c. It is the time a VR system takes to respond to a user’s action.
d. It refers to adverse symptoms and readily observable signs that are associated with exposure to real (physical or visual) and/or apparent motion.

Answer: b

12 (Lecture 7 – Persuasive Technology and Behavior Change)

Which of these statements below is correct for “facilitator as trigger”?

a. It works when a person lacks motivation but has the ability and sufficient trigger.
b. Persuading people to donate, by showing the benefits of donation on people, is an example of “facilitator as trigger”.
c. Social media address book uploaders are an example of “facilitator as trigger”.
d. When people have both motivation and ability, “facilitator as trigger” works well.

Answer: c
Open question 1 (max. approx. 15 lines)

Tversky and Kahneman researched the framing effect in the context of decision making. They used two now famous examples: a visit to the theatre, when either a ticket or money are lost; and the Asian disease problem.

- What is the framing effect?
- Use one of the examples given above, or your own example, to explain the effect.

<table>
<thead>
<tr>
<th>Framing effect</th>
<th>the outcome of a decision can be influenced by the background context of the choice, and the way in which a question is worded.</th>
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</thead>
<tbody>
<tr>
<td>Context:</td>
<td>A: Theater ticket of $20 is lost - 46 % buys a new ticket; B: $20 is lost - 88 % buys a new ticket.</td>
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<td></td>
<td>The decision frame is different so the situation feels different: A: a theater play is a transaction for which a certain price is acceptable. A new ticket makes the costs of a new ticket too high. B: losing €20 has no relation with (the costs of) the ticket.</td>
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<tr>
<td>Wording:</td>
<td>People are distracted by the surface structure of the questions. The exact wording of a question can have a major effect on the answers.</td>
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<td></td>
<td>The Asian Disease problem uses different wording, focusing either on the survivors (so on possible gains) or on the victims (so on the great risk). People prefer the solutions that focus on possible gains, and avoid great losses.</td>
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</tbody>
</table>
Open question 2 (max. approx. 15 lines)

What is the relationship between space, action and presence? Explain with appropriate terminology from the literature and give examples.

Based on Riva and Montovani. (2014)


Presence traditionally is defined as a term related to the experience of sensation given a technological medium and is called the “perceptual illusion of non-mediation”. For example, the feeling of presence can be increased in virtual reality by designing the system as good as it gives the feeling that people feel a sensation of reality. (Lombard and Ditton, 1997)

The paper from Riva and Mantovani in 2014 brings a more general explanation to presence that relies on human cognitive processes. They mention that it is a neuropsychological phenomenon that is related with a sense of agency and control, in other words, one will feel present if he/she will be able manage to put his/her intentions into action.

Thus presence is related with the use of space. We experience the space from the first-person (eg-centric) and third-person (allocentric) perspective. Ego-centric perspective defines the space we can directly grasp and manipulate objects/tools. Allocentric perspective makes us to see ourselves as part of a bigger world and the space extends to the areas that is out of the reach of the individual.

They define two types of actions: first-order and second-order mediated interaction. First-order mediated interaction uses the body to control a tool to make an action in the peripersonal space. In that case, there is a direct connection between the body, the tool and the external object. For example, when playing tennis we use the racquet to hit a ball in our peripersonal space using our arm.

In the second-order mediated interaction, the body uses a tool in the peripersonal space that controls another tool in an external space. There is a spatial disconnection between the peripersonal space and the external space and the external space can be virtual or real. For example, a crane using a lever to move a mechanical boom to lift heavy objects is an example of a real external space. Similarly, a videogame player uses a joystick to move an avatar to pick up a sword which is an external virtual object. Another example is to use your body to move virtual avatar to pick up a virtual object using Kinect. In that case, there is no intermediary tool but body is used as a medium to make an action on an object in the external virtual space.