



UNIVERSITY  
OF SKÖVDE

School of **Bioscience**

## WRITTEN EXAMINATION

Course **Cognitive Functions – Applied Methods G1F**

Examination **Supervised Written Examination**

Course code **KU336G**

Credits for written examination **4hp**

Date **26-01-13**

Examination time **14:15-18:30**

Examination responsible **Patrick Falk**

Teachers concerned **Patrick Falk**

Aid at the exam/appendices

Other

### Instructions

- Take a new sheet of paper for each teacher.
- Take a new sheet of paper when starting a new question.
- Write only on one side of the paper.
- Write your name and personal ID No. on all pages you hand in.
- Use page numbering.
- Don't use a red pen.
- Mark answered questions with a cross on the cover sheet.

### Grade points

VG: 35-43 points (80-100%)

G: 25-34 points (60-80%)

U: 0-24 points (< 60%)

**Examination results should be made public within 18 working days**

*Good luck!*

Total number of pages

Welcome to the Cognitive Functions – Applied Methods (KU336G) supervised exam!

This exam determines your final grade (U/G/VG). Each multiple-choice question has one correct answer among the four options provided, unless otherwise noted! For each question, carefully read all answer options before selecting the one you believe is most correct by circling the letter (a-d). If you change an answer, ensure the old mark is completely erased to avoid ambiguity.

**VG:** 35-43 points (80-100%)

**G:** 25-34 points (60-80%)

**U:** 0-24 points (< 60%)

Good luck!

## Part 1: True/False (1-point)

1. **Autism is a condition that can arise not only from hereditary factors affecting brain function but also from acquired conditions that cause brain damage.**
  - a. True
  - b. False
  
2. **A test is valid independently of its reliability.**
  - a. True
  - b. False
  
3. **ADHD is a neurodevelopmental disorder.**
  - a. True
  - b. False
  
4. **The worldwide prevalence of autism is approximately 1%.**
  - a. True
  - b. False
  
5. **ADHD in children and adolescents is a consequence of dysfunction of the prefrontal cortex.**
  - a. True
  - b. False

6. **The DSM is not the only widely accepted system for classifying mental diseases.**
  - a. True
  - b. False
  
7. **Psychiatry is a subfield of Psychology.**
  - a. True
  - b. False
  
8. **Many mental disorders in the DSM include at least one mandatory criterion that must be met before a diagnosis can be assigned.**
  - a. True
  - b. False
  
9. **According to the DSM, two individuals cannot receive the same mental disorder diagnosis unless they share at least one identical symptom.**
  - a. True
  - b. False
  
10. **In the DSM, diagnoses are based on patients' subjective reports of symptoms and/or clinical observation of their behavior.**
  - a. True
  - b. False

## **Part 2: Multiple Choice (1-point)**

11. **This type of validity refers to the extent to which a set of items or tasks is conceptually appropriate and adequately represents a defined psychological domain. That is, how well a test measures the behavior it is intended to assess or predict.**
  - a. Criterion
  - b. Content
  - c. Construct
  - d. Content Internal
  
12. **Neuropsychological assessment depends:**
  - a. completely on the patient's expertise
  - b. eventually on the neuropsychologist's own subjective evaluations
  - c. on quantitative scores that exclude systematic comparisons among different groups
  - d. on multiple components of information including the context of assessment and test data

13. Neuropsychologists often incorporate several tests that are administered to each individual, this collection of tests is also known as a \_\_\_\_\_.
- test corpus
  - test battery
  - test assembly
  - test arsenal
14. To compare an individual's test performance with the expected performance of others in the population, neuropsychologists use normative data. A \_\_\_\_\_ score is used to classify individuals as either impaired or within normal limits.
- criteria
  - cut-off
  - ceiling
  - limit
15. Several types of language impairments exist. When a patient is unable to articulate spoken language due to impaired neurological control of the speech muscles, this condition is called:
- Dysarthria
  - Aphasia
  - Apraxia
  - Dyscalculia
16. What does the abbreviation "DSM" stand for?
- Diagnostic System of Manual of Mental Disorders
  - Diagnostic and Standard Manual of Mental Disorders
  - Diagnostic and Statistical Manual of Mental Diseases
  - Diagnostic and Statistical Manual of Mental Disorders
17. Which of the following statements concerning the etiology of autism in children and adolescents are correct:

**Statement I: Children and adolescents with autism tend to have a high prevalence of syndromal and hereditary genetic diseases**

**Statement II: Autism in children and adolescents can also be caused by brain damage due to neuro-inflammatory diseases or cerebral bleeding among other causes.**

- Statement I is correct, Statement II is incorrect
- Statement I is incorrect, Statement II is correct
- Both statements are correct
- Both statements are incorrect

**18. Which statement correctly describes the difference between qualitative and quantitative data?**

- a. Qualitative data is numerical and measured on a scale, whereas quantitative data describe categories or qualities.
- b. Qualitative data describes non-numerical characteristics, whereas quantitative data are expressed as numerical values.
- c. Qualitative data can only be analyzed using parametric statistics, whereas quantitative data cannot.
- d. Qualitative and quantitative data differ only in how they are graphically displayed.

**19. Which statement best characterizes continuous and categorical variables?**

- a. Continuous variables consist of distinct groups, whereas categorical variables can take any value within a range.
- b. Continuous variables can take any value within a defined range, whereas categorical variables represent discrete groups or labels.
- c. Continuous variables are always qualitative, whereas categorical variables are always quantitative.
- d. Continuous and categorical variables are interchangeable terms in statistical analysis.

**20. What is the primary distinction between parametric and non-parametric statistical tests?**

- a. Parametric tests are used only for categorical data, whereas non-parametric tests are used only for continuous data.
- b. Parametric tests do not rely on assumptions about data distribution, whereas non-parametric tests do.
- c. Parametric tests assume specific properties of the data distribution, whereas non-parametric tests make fewer or no such assumptions.
- d. Parametric and non-parametric tests always yield identical results when applied to the same dataset.

**21. The involuntary failure to attend to sensory stimuli presented on the side of space opposite to the site of brain injury (in the absence of sensory problems) is called \_\_\_\_\_ syndrome.**

- a. agnosia
- b. blindsight
- c. contralateral hemifield
- d. neglect

**22. \_\_\_\_\_ refers to the processing of incoming information to be stored.**

- a. Retrieval
- b. Recall
- c. Encoding
- d. Explicit memory

23. Deficits in memory as a function of brain damage, disease, or psychological trauma are known collectively as
- aphasia
  - agnosia
  - anomia
  - amnesia

### Part 3: Short Written Answers (1-3 points)

24. According to Miller (1956), the magical number \_\_\_\_\_ corresponds to our working memory capacity for keeping information accessible for short periods of time. (2 points)
25. Name the neuropsychological test along with two major cognitive domains that are assessed with this test, that includes an immediate copy and a delayed recall component, in which individuals reproduce a complex geometric figure from memory. (3 points)
26. The normal distribution forms the basis of scoring for many standardized neuropsychological tests. Approximately 68% of all observations fall within 1 \_\_\_\_\_ from the mean. (1 point)
27. What is the main cognitive difference between Trail Making Test Part A and Part B? (1 point)
28. What core cognitive function is primarily measured by the Digit Symbol Substitution Test? Also name two cognitive abilities (other than processing speed) that influence performance on the test. (3 points)

## **Part 4: Written Answers (2-4 points)**

**29. Describe the standard battery approach used in neurological assessment. (2 points)**

**30. Reliability and validity are key concepts for evaluating the quality of research and assessment tools. For a neuropsychological test to be useful, it must demonstrate both.**

**(a) Describe what reliability refers to and provide one example of a measurement that would be considered reliable. (2 points)**

**(b) Describe what validity refers to and provide one example of a measurement that would be considered valid. (2 points)**

**31. Attention is a fundamental cognitive function that overlaps with processes such as perception, memory, and spatial orientation.**

**(a) Describe what selective attention is and give one everyday example of a situation in which either endogenous or exogenous attention is used. (2 points)**

**(b) Describe what covert attention is and give one everyday example of a situation in which it is used. (2 points)**