

**LEAD CITY UNIVERSITY, IBADAN**  
**FACULTY OF ARTS AND EDUCATION**  
**DEPARTMENT OF ARTS AND SOCIAL SCIENCES EDUCATION**  
**SECOND SEMESTER 2017/2018 ACADEMIC SESSION**

**COURSE PARTICULARS**

**Course Title:** Biological Psychology

**Course Code:** GCE 113

**Number of Units:** 2

**Status:** Required

**COURSE LECTURER**

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**Qualification:** B. Ed. [Guidance and Counselling/Political Science], M. Ed. [Counselling Psychology], Ph.D. [Clinical/Counselling Psychology]

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**Area of Specialisation:** Clinical/Counselling Psychology

**COURSE DESCRIPTION**

This course addresses the biological bases of behaviour: normal and abnormal alike. Students will examine the structural and functional organisation of the nervous system. Focus will be on interrelationships between physiological functioning and behaviour, with special reference to sensory processes, sleep and arousal, motivation and emotion, learning and memory and language, drugs use and abuse. Students will be introduced to the effects of the endocrine system on thought and action.

**COURSE OBJECTIVES:**

At the end of this lecture, students should be able to:

- Describe the biological bases of specific behaviour, both normal and abnormal
- Explain the role of the Nervous system in organization of actions of humans
- Discuss sleep and its importance to humans, as well as sleep disorders and behaviour

- Demonstrate the knowledge of hormones and their effects on human behaviour

## LECTURE PLAN

| WEEK | TOPIC   |
|------|---|
| 1    | Introduction/Behaviour and Behavioural Neuroscience |
| 2    | Historical Perspectives in Biological Psychology    |
| 3    | Neurones and Synapses                               |
| 4    | Neurotransmitters                                   |
| 5    | The Nervous System-Central Nervous System           |
| 6    | The Nervous System-Peripheral Nervous System        |
| 7    | The Limbic System                                   |
| 8    | Cognition and Cognitive Dysfunctions                |
| 9    | The Endocrine System-Hormones and Behaviour         |
| 10   | Sleep and Behaviour                                 |
| 11   | Psychopharmacology                                  |
| 12   | Revision  |

## READING LIST

Carlson, N. R. (2012). *Physiology of Behaviour*. (6<sup>th</sup> Ed.) Boston: Pearson A and B.

Levinthal, C.F. (1990). *Introduction to Physiological Psychology*. (5<sup>th</sup> Ed.) Englewood Cliff, NJ: Prentice Hall.

Santrock, J.W. (2005) *Psychology*. (7<sup>th</sup> Ed.) McGraw-Hill Books.

## COURSE REQUIREMENTS/ASSESSMENT

For a student to qualify to sit for the final examination in this course, he or she is expected to have a minimum attendance of 75% at lectures.

Continuous Assessment-40 marks [Test-20 marks, Term Paper (Individual & Group)-20 marks]

Examination-60 marks

## TUTORIAL QUESTIONS

1(a). With the aid of a well-labelled diagram, describe the functions of a typical neurone. (b) State the distinguishing features between Dendrites and Axons.

2(a). With the aid of a diagram, describe the structure of the human brain. (b) List the major centres in the Medulla oblongata.

3. Describe six (6) of the organs that constitute the Limbic system.

4(a). Highlight the functions of the Cerebrum (b) State the three main divisions of the Peripheral nervous system?

5. What brings about the Fight, Flight and Freeze reactions? (b) Describe the Sympathetic and Parasympathetic nervous systems.

6. Write short notes on the following:

i. Broca Aphasia ii. Wernicke aphasia iii. Motor neurone iv. Sensory neurone v. Action potential

7(a). How do Seizure disorder and Epilepsy affect behaviour? (b) Discuss one psychotherapeutic intervention you can give to the families and caregivers of sufferers.

8(a). Describe Neurotransmitters. (b) Highlight the Classes and Sub-classes of neurotransmitters

9(a). Describe the six (6) hierarchical processes of Cognition. (b) Briefly describe Dementia.

10(a) Define Psychopharmacology. (b) Write short notes on the following:

i. Site of action ii. Drug tolerance iii. Pharmacokinetics iv. Half life

11(a) Why do we sleep? (b) Write short notes on the following:

i. REM Sleep ii. Insomnia iii. Sleep Apnea iv. Nocturnal Enuresis

12(a) Define Hormones (b) List the Hormones of both the Anterior and the Posterior Pituitary gland. (c) Should the Pineal gland exist?

## MARKING GUIDE FOR GCE 113 2017/2018 ACADEMIC SESSION

### Question

1(a). With the aid of a well-labelled diagram, describe the functions of a typical neurone. (b) State the distinguishing features between Dendrites and Axons.

### Answer

1(a). A large well-labelled diagram of a neurone-**3 marks**, with clearly spelt components like the Soma, Axon, Dendrite and Terminal buttons-**3 marks**. Also brief descriptions of the components- **9 marks (Total=15 marks)**.

### Question

2(a). With the aid of a diagram, describe the structure of the human brain. (b) List the major centres in the Medulla oblongata.

### Answer

2(a). A large well-labelled diagram of the human brain-**3 marks**, with labels showing the positions of the cerebrum, pons varolii, corpus callosum, cerebellum, pituitary gland, medulla oblongata, midbrain-**5 and a half marks**. (b) A full list of the centres in the medulla oblongata-**7 marks (Total=15 marks)**.

### Question

3. Describe six (6) of the organs that constitute the Limbic system.

### Answer

3. A comprehensive list-(**2 marks**) and succinct description of the organs of the Limbic system- (**13 marks**) (**Total=15 marks**).

### Question

4(a). Highlight the functions of the Cerebrum (b) State the three main divisions of the Peripheral nervous system?

### Answer

4(a). Full highlights of the functions of the Cerebrum-(**11 marks**) (b) The three main divisions of the Peripheral Nervous system in the right order-(**4 marks**).

### Question

5. What brings about the Fight, Flight and Freeze reactions? (b) Describe the Sympathetic and Parasympathetic nervous systems.

### Answer

5. Description of an emergency situation (considering the role of Adrenaline) that could bring these reactions and explanations-(**7 marks**) (b) full description of the Sympathetic and Parasympathetic nervous systems-(**8 marks**) (**Total=15 marks**).

### **Question**

6. Write short notes on the following:

i. Broca Aphasia ii. Wernicke aphasia iii. Motor neurone iv. Sensory neurone v. Action potential

### **Answer**

6. Succinct notes of the constructs-(**3 marks each**) (**Total= 15 marks**).

### **Question**

7(a). How do Seizure disorder and Epilepsy affect behaviour? (b) Discuss one psychotherapeutic intervention you can give to the families and caregivers of sufferers.

### **Answer**

7(a). The effects of Seizure disorder and Epilepsy on the psychological and social functioning of sufferers-(**9 marks**) (b) detailed discussion of psychotherapy that can be given to families and caregivers and even suffers-(**6 marks**).

### **Question**

8(a). Describe Neurotransmitters. (b) Highlight the Classes and Sub-classes of neurotransmitters

### **Answer**

8(a). Description of Neurotransmitters, the types-excitatory and inhibitory and their locations throughout the nervous system-(**6 marks**) (b) description of the Classes and Sub-classes of neurotransmitters-(**9 marks**).

### **Question**

9(a). Describe the six (6) hierarchical processes of Cognition. (b) Briefly describe Dementia.

### **Answer**

9(a). The six (6) hierarchical processes of Cognition-(**10 marks**) (b) Brief description of Dementia-(**5 marks**)

### **Question**

10(a) Define Psychopharmacology. (b) Write short notes on the following:

i. Site of action ii. Drug tolerance iii. Pharmacokinetics iv. Half life

### **Answer**

10(a). Definition of Psychopharmacology-(**3 marks**) (b) Short notes on the constructs-(**12 marks**).

**Question**

11(a) Why do we sleep? (b) Write short notes on the following:

i. REM Sleep ii. Insomnia iii. Sleep Apnea iv. Nocturnal Enuresis

**Answer**

11(a) Description of sleep, why we sleep and types of sleep-(**7 marks**) (b) Short notes on the concepts and terms-(**8 marks**).

**Question**

12(a) Define Hormones (b) List the Hormones of both the Anterior and the Posterior Pituitary gland. (c) Should the Pineal gland exist?

**Answer**

12(a) Definition of hormones-(**3 marks**) (b) List of hormones from the Pituitary gland-(**8 marks**) (c) Judgement and importance of the Pineal gland-(**4 marks**).