QP CODE: 24900268

Reg No:.....

Name:.....

MAHATMA GANDHI UNIVERSITY, KOTTAYAM

FIRST SEMESTER MGU-UGP (HONOURS) REGULAR EXAMINATION NOVEMBER 2024

First Semester

Discipline Specific Core Course - MG1DSCZGY101 - BIOLOGICAL BASIS OF BEHAVIOUR 1

(2024 ADMISSION ONWARDS)

Duration: 1.5 Hours Maximum Marks: 50

Remember (K), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C), Interest (I), Appreciation (Ap), and Skill (S)

Students should attempt atleast one question from each course outcome to enhance their overall outcome attainability.

[Learning Domain][CO No(s)]

Part A
Fill In The Blanks Questions
Answer all questions
Each question carries 1 mark

1	The presence of _____ in the extracellular fluid contributes to the overall positive charge outside the cell.	[U]	[2]
2	The Goldman equation is used to calculate the _____ of a cell's membrane.	[U]	[2]
3	The resting membrane potential of a typical neuron is approximately _____ mV.	[U]	[2]
4	The New World primates reside in --------	[U]	[1]
5	The first known member of our genus was---------	[K]	[1]
6	Structures that are similar due to a common evolutionary origin are called ----------organs.	[K]	[1]
7	The _____ receives proprioceptive input from muscles and joints to help maintain posture.	[K]	[3]

8	The _____ coordinates balance, posture, and fine motor skills.	[U]	[3]
9	The _____ system is involved in emotional responses and can influence autonomic functions.	[U]	[4]
10	The brain structure that regulates autonomic functions is the _____.	[K]	[4]

(10 × 1 = 10)

Part B

Short Answer Type Questions
Answer 10 questions
Each question carries 2 marks

11	How does the autonomic nervous system influence emotional responses?	[U]	[4]
12	Describe the relationship between the autonomic nervous system and the stress response.	[U]	[4]
13	Describe the two brain regions that are critical for autonomic control.	[U]	[4]
14	What are glial cells, and how do they support the nervous system?	[U]	[3]
15	Explain how neurotransmitters are involved in communication between neurons.	[U]	[3]
16	Describe the blood-brain barrier and its function.	[U]	[3]
17	Mention the physical and physiological functions of neurotransmitters.	[U]	[2]
18	What triggers the release of neurotransmitters from synaptic vesicles?	[U]	[2]
19	How do neurotransmitters affect target cells?	[U]	[2]
20	Describe why it is considered acceptable to use animals in research?	[U]	[1]
21	Examine the main ethical concerns associated with the use of animals in scientific research.	[U]	[1]
22	List the animals commonly used in research.	[K]	[1]

(10 × 2 = 20)

Part C

Short Essay Type Questions
Answer 5 questions
Each question carries 4 marks

23	Discuss the Na+/K+ pump and its role in maintaining the resting membrane potential	[U]	[2]

24	Explain the importance of the electrochemical gradient in the generation of the resting membrane potential.	[U]	[2]
25	How single nucleotide polymorphism influences human evolution?	[U]	[1]
26	Write a short note on importance of natural selection?	[K]	[1]
27	How does the medulla oblongata control automatic functions and reflexes?	[U]	[3]
28	How does the hindbrain contribute to the regulation of vital autonomic functions, such as heart rate and breathing?	[U]	[3]
29	What protective structures surround the central nervous system, and how do they help maintain its function?	[U]	[4]

(5 × 4 = 20)

END OF THE QUESTION PAPER

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