Reg. No.: .....

Name: .....

University of Kerala

U8877

Second Semester FYUGP Degree Examination, April 2025

Discipline Specific Core Course

ZOOLOGY

UK2DSCZOO104 - Sensory Physiology

Academic Level: 100-199

Time: 2 Hours(120 Mins) **Max. Marks: 56**

Part A.6 Marks:Time 5 Minutes.(Cognitive Level :Remember(RE)/Understand(UN)) Objective Type.1 mark each, Answer all questions

Qn No.	Question	CL	CO
1	Choose the region in which Eustachian tube is situated Options : A)Inner ear B)Middle ear C)Outer ear D)Auditory cortex	RE	2
2	Where are olfactory receptors located? Options : A)A) On the tongue B)B) In the nasal cavity C)C) In the inner ear D)D) On the skin	RE	3
3	Identify the main function of A - delta fibers Options : A)To transmit pain signal B)To transmit touch and pressure signals C)To transmit temperature signals D)To transmit vibration signals	UN	4
4	Name the sensory nerve that carries auditory impulses from the ear to the brain. Options : A)A. Optic nerve B)B. Auditory nerve C)C. Olfactory nerve D)D. Motor nerve	UN	2
5	Find the visual defect caused by uneven corneal curvature. Options : A)A)Myopia B)B)Presbyopia C)C)Astigmatism D)D)Amblyopia	UN	1
6	Cite the olfactory disorder that causes a complete loss of the sense of smell. Options : A)Hyposmia B)Anosmia C)Parosmia D)Phantosmia	UN	3

Part B.10 Marks.Time:20 Minutes (Cognitive Level:Understand(UN)/Apply(AP))Two-three sentences.2 marks each.Answer all questions

Qn No.	Question	CL	CO
7	Define opponent process theory	UN	1

<table>
<tr><th>Qn No.</th><th>Question</th><th>CL</th><th>CO</th></tr>
<tr><td>8</td><td><table>
<tr><th>A</th><th>B</th></tr>
<tr><td>a. A-delta fibers</td><td>1. Transmit slow, dull, and chronic pain</td></tr>
<tr><td>b. C- Fibers</td><td>2. Detect noxious thermal, chemical, or mechanical stimuli</td></tr>
<tr><td>c. TRP receptors</td><td>3. Responsible for transmitting sharp, localized pain</td></tr>
<tr><td>d. Nociceptors</td><td>4. Specialized nerve endings that detect tissue damage or harmful stimuli</td></tr>
</table></td><td>UN</td><td>4</td></tr>
<tr><td>9</td><td>Describe the structure of organ of corti in the inner ear.</td><td>AP</td><td>2</td></tr>
<tr><td>10</td><td>Construct a diagram showing the location of taste buds on the tongue.</td><td>AP</td><td>3</td></tr>
<tr><td>11</td><td>Explain trichromatic theory of colour vision</td><td>AP</td><td>1</td></tr>
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Part C.16 Marks.Time:35 Minutes.(Cognitive Level :Apply(AP)/Analyse(AN))Short Answer.4 marks each, Answer all 4 questions,choosing among options * within each question

Qn No.	Question	CL	CO
12	A) Organize the visual pathway from retina to cortex. OR B) Illustrate the labelled structure of eye.	AP	3, 3
13	A) Explain the perception of different tastes. OR B) Explain the interaction between sense of taste and smell	AP	4, 3
14	A) Analyse the gate control theory of pain suppression system in brain. OR B) Make a comparison between clinical abnormalities of pain	AN	3, 3
15	A) Analyze how the different parts of the ear contribute to the mechanism of hearing and how damage to each part affects sound perception. OR B) Examine the structure and function of the cochlea in auditory processing.	AN	2, 2

Part D.24 Marks.Time: 60 Minutes.(Cognitive Level :Analyse(AN)/Evaluate(EV)/Create(CR)) Long Answer 6 Marks each.Answer all 4 questions choosing among options * within each question

Qn No.	Question	CL	CO
16	A) With a suitable diagram analyse the anatomical structures of the human ear, illustrating their roles in the hearing process. OR B) Compare and contrast the key components of the lemniscal and the non-lemniscal auditory pathways	AN	2, 2
17	A) Evaluate the impact of anosmia and ageusia on an individual's sensory experience and quality of life. OR B) Compare and contrast the structural differences between olfactory and gustatory receptors, and explain how these differences relate to their respective functions in sensory perception.	EV	3, 3
18	A) Critically evaluate the role of alternative pain management techniques such as acupuncture, TENS, and Placebo effect. Discuss their scientific basis and clinical significance. OR B) Evaluate the clinical abnormalities associated with pain and other somatic sensations, including hyperalgesia, thalamic syndrome, trigeminal neuralgia (Tic Douloureux), and Brown-Séquard syndrome, and evaluate current management strategies for each.	EV	4, 4
19	A) List out all major eye disorders like astigmatism, cataract, glaucoma and prepare an essay including causes, symptoms and treatments of each one. OR B) Explain in detail the types of visual pigments found in photoreceptor cells (rods and cones) and their role in the process of vision, including their contributions to color perception, low-light vision.	CR	1, 1