Written

1. Give a short account on olfactory centres (medial, lateral and intermediate)?

2. Enumerate and mechanism of basic taste modalities?

3. Def ageusia , hypogeusia , Dysguesia ?

4. Enumerate characters of olfactory epithelium ?

5. Mention mechanism of stimulation of olfactory receptors ?

6. Def anosmia , hyposmia , dysosmia ?

7. Mention significance of taste , smell ?

MCQ taste and smell

8. Olfactory receptor cells belong to which of the following groups of cells? *a) Bipolar neurons* *b) Fibroblasts* *c) Multipolar neurons* *d) Pseudounipolar neurons* *e) Unipolar neurons*	**A**
9. Salt tastant activates the taste receptors by which of the following mechanisms? *a) Activation of 2nd messenger such as IP3* *b) Activation of epithelial Na channels* *c) Activation of metabotropic glutamate receptors* *d) Opening H channels* *e) Opening of K channels*	**B**
10. In order for a molecule to be detected by the olfactory neurons, it must *a) be present in high concentrations.* *b) be one of the seven primary classes of odors.* *c) be dissolved in fluid covering the olfactory epithelium.*	**C**

d) interact with the mechanoreceptors of the olfactory hair membrane. *e) enter the nose slowly.*	
11. Medial olfactory areas: *a) are involved in primitive emotional reactions to odors.* *b) is the site of conscious perception of odors.* *c) generates action potentials in olfactory neurons.* *d) modulates the sense of olfaction within the olfactory bulb.* *e) is the area where chemicals bind to receptors.*	**A**
12. Which of the special senses contains receptor neurons that are the only nerve cells in direct contact with the outside environment? *a) Equilibrium* *b) Hearing* *c) Olfaction* *d) Taste* *e) Vision*	**C**
13. Which of the following is NOT a primary odor class? *a) Umami* *b) Floral* *c) Putrid* *d) Pepperminty* *e) Ethereal*	**A**
14. Sensory structures that detect taste are: *a) palates* *b) papillae* *c) taste buds* *d) ciliary membranes* *e) thermoreceptors*	**C**

15. Why does inhaling deeply and slowly through the nose help to identify an odor? *a) More air containing the odor is brought into contact with the olfactory epithelium.* *b) Impulses originate slowly in the olfactory epithelium.* *c) The tissue needs more time in contact with the odor.* *d) Threshold for odor detection is high.* *e) Receptors in the olfactory epithelium are highly specific.*	**A**
16. The sense of taste is called: *a) olfaction* *b) perception* *c) gustation* *d) tastant* *e) mastication*	**C**
17. Sweet taste is sensed mainly at: *a) the tongue edge.* *b) the tongue back.* *c) the tongue tip.* *d) the tongue base.* *e) all the tongue surface.*	**C**
18. Sour sensation is tasted at: *a) base of the tongue only.* *b) edges of the tongue.* *c) dorsum of the tongue only.* *d) both dorsum and base of the tongue.* *e) tip of the tongue mainly.*	**B**

19. Bitter taste is best tasted at: *a) edge of tongue.* *b) tip of tongue.* *c) base of tongue.* *d) dorsum of tongue anteriorly.*	**C**
20. The substance which causes olfactory stimulation must be: *a) only volatile.* *b) volatile and water soluble.* *c) volatile and lipid soluble.* *d) water and lipid soluble but not volatile.* *e) volatile & water and lipid soluble.*	**E**
21. The olfactory receptors: *(A) Are entirely non-adaptive.* *(B) Are ordinary epithelial cells.* *(C) Are stimulated by non-volatile water soluble substances* *(D) Are located in a small area at the roof of the nasal cavity* *(E) Have a high ability to discriminate different odour intensities.*	**D**
22. The sense of smell in man is characterised by: *(A) A high threshold* *(B) Lack of adaptation.* *(C) 4 primary sensations.* *(D) Poor quantitative gradation.*	**D**
23. Adaptation Of the taste and olfactory stimuli: *(A) Does not occur at all.* *(B) Occurs only at the receptors.* *(C) Occurs mainly in the CNS.* *(D) In case of taste, it occurs only for the sweet and bitter tastes.* *(E) in case of smell, the adaptation is nonspecific.*	**C**

24. The taste buds : *(A) Are absent in the circumvallate papillae.* *(B) Contain taste cells whose life span in animals is about 10 days.* *(C) Persist after cutting the taste nerve fibres.* *(D) Become more sensitive in old age*	***B***
25. The taste receptors: *a) For sour are predominant at the posterior part of the tongue.* *b) Generally give rise to a sour taste when stimulated by H ions.* *c) Always give rise to a salty taste when stimulated by salts of metals.* *d) Together with the olfactory receptors are more excited when the food is cold than when it is cold*	***B***
26. The olfactory sensory cells: *(A) Do not adapt.* *(B) Relay with neurons that pass to the thalamus.* *(C) Are epithelial cells that synapse with the underlying olfactory nerves.* *(D) Are of great importance in appreciating the flavor of food.*	***D***
27. The olfactory system can detect: *(A) 4 primary odours only.* *(B) Small changes in the intensity of a given odour.* *(C) Volatile as well as non-volatile substances.* *(D) Odours at lower concentrations by sniffing.*	***D***
28. Which tongue papille , taste buds not associated with *(A) fungiform* *(B) foliate* *(C) circumvallate* *(D) filiform*	***D***

What are the primary taste modalities recognized by humans?

- A) Sweet, sour, salty, bitter, umami
- B) Sweet, sour, spicy, salty, bitter
- C) Sweet, sour, umami, tangy, astringent
- D) Sweet, salty, bitter, tangy, pungent
  Answer: A) Sweet, sour, salty, bitter, umami

- **Which taste modality is associated with the presence of amino acids, such as glutamate?**

  - A) Sweet
  - B) Sour
  - C) Bitter
  - D) Umami
    Answer: D) Umami

- **Which of the following compounds is most likely to elicit a bitter taste?**

  - A) Sucrose
  - B) Quinine
  - C) Sodium chloride
  - D) Citric acid
    Answer: B) Quinine

Which type of taste receptor is primarily activated by sweet and umami substances?

- A) Ionotropic receptors
- B) Metabotropic receptors
- C) Mechanoreceptors
- D) Thermoreceptors
  Answer: B) Metabotropic receptors

- **Which taste modality is primarily associated with the detection of potentially poisonous substances?**

  - A) Sweet
  - B) Salty
  - C) Bitter
  - D) Umami
    Answer: C) Bitter

- **What happens to the taste sensation when a person experiences taste adaptation?**

  - A) The sensitivity to all tastes increases.
  - B) The ability to perceive taste is enhanced.
  - C) The sensitivity to a specific taste decreases after prolonged exposure.
  - D) The taste buds regenerate rapidly.
    Answer: C) The sensitivity to a specific taste decreases after prolonged exposure

Which type of receptors are primarily involved in the detection of odorants?

- A) Photoreceptors
- B) Mechanoreceptors
- C) Chemoreceptors
- D) Thermoreceptors
  Answer: C) Chemoreceptors

Which type of protein is primarily involved in the detection of odorants by olfactory receptors?

- A) Ion channels
- B) G-protein coupled receptors (GPCRs)
- C) Enzymes
- D) Transport proteins
  Answer: B) G-protein coupled receptors (GPCRs)