

# Chapter 02

## Structural Organisation in Animals



### NEET-FLASHBACK



**Q.1** Areolar connective tissue joins: [AIPMT 2006]

- (1) Fat body with muscles
- (2) Integument with muscles
- (3) Bones with muscles
- (4) Bones with bones

**Q.2** Mast cells secrete: [AIPMT 2006]

- (1) Hippurin                      (2) Myoglobin
- (3) Histamine                  (4) Haemoglobin

**Q.3** In which one of the following preparations are you likely to come across cell junctions most frequently? [AIPMT 2007]

- (1) Hyaline cartilage
- (2) Ciliated epithelium
- (3) Thrombocytes
- (4) Tendon

**Q.4** The cell junctions called tight, adhering and gap junctions are found in: [AIPMT 2009]

- (1) Neural tissue
- (2) Muscular tissue
- (3) Connective tissue
- (4) Epithelial tissue

**Q.5** The kind of tissue that forms the supportive structure in our pinna (external ears) is also found in :- [AIPMT 2009]

- (1) Tip of the nose      (2) Vertebrae

(3) Nails

(4) Ear ossicles

**Q.6** The epithelial tissue present on the inner surface of bronchioles and fallopian tubes is :

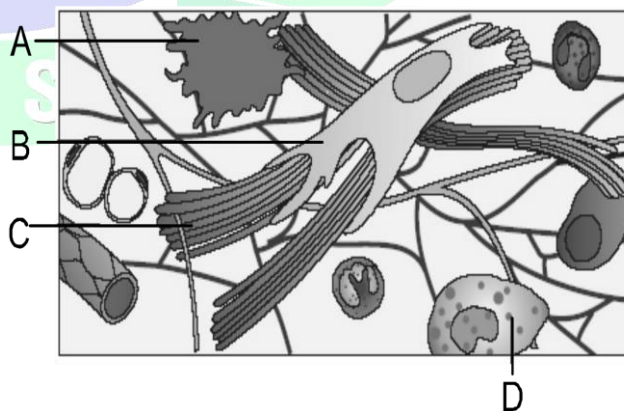
[AIPMT 2009]

- (1) Squamous                  (2) Cuboidal
- (3) Glandular                (4) Ciliated

**Q.7** The kind of epithelium which forms the inner walls of blood vessels is : [AIPMT-Pre 2010]

- (1) squamous epithelium
- (2) cuboidal epithelium
- (3) columnar epithelium
- (4) ciliated columnar epithelium

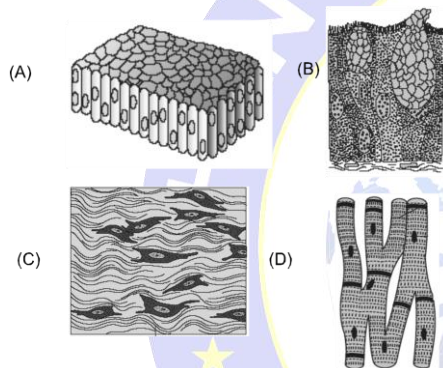
**Q.8** Given below is the diagrammatic sketch of a certain type of connective tissue. Identify the parts labelled A, B, C and D, and select the right option about them : [AIPMT-Mains 2012]



## STRUCTURAL ORGANISATION IN ANIMALS

|     | Part A     | Part B          | Part C          | Part D          |
|-----|------------|-----------------|-----------------|-----------------|
| (1) | Macrophage | Collagen fibres | Fibroblast      | Mast cell       |
| (2) | Mast cell  | Collagen fibres | Fibroblast      | Macrophage      |
| (3) | Macrophage | Fibroblast      | Collagen fibres | Mast cell       |
| (4) | Mast cell  | Macrophage      | Fibroblast      | Collagen fibres |

**Q.9** The four sketches (A,B,C and D) given below, represent four different types of animal tissues. Which one of these is correctly identified in the options given, along with its correct location and function?  
[AIPMT-Mains 2012]



|     |     | Tissue               | Location  | Function                         |
|-----|-----|----------------------|-----------|----------------------------------|
| (1) | (D) | Smooth muscle tissue | Heart     | Heart contraction                |
| (2) | (A) | Columnar epithelium  | Nephron   | Secretion and absorption         |
| (3) | (B) | Glandular epithelium | Intestine | Secretion                        |
| (4) | (C) | Collagen fibres      | Cartilage | Attach skeletal muscles to bones |

**Q.10** The supportive skeletal structures in the human external ears and in the nose tip, are examples of:  
[AIPMT 2012]

- (1) bone                      (2) cartilage  
(3) ligament                (4) areolar tissue

**Q.11** Choose the correctly matched pair :  
[AIPMT 2014]

- (1) Tendon-Specialized connective tissue  
(2) Adipose tissue - Dense connective tissue  
(3) Areolar tissue - Loose connective tissue  
(4) Cartilage-Loose connective tissue

**Q.12** The function of the gap junction is to :

[Re-AIPMT 2015]

- (1) Stop substance from leaking across a tissue  
(2) Performing cementing to keep neighbouring cells together  
(3) Facilitate communication between adjoining cells by connecting the cytoplasm for rapid transfer of ions, small molecules and some large molecules  
(4) Separate two cells from each other.

**Q.13** Which type of tissue **correctly** matches with its location ?  
[NEET 2016]

| Tissue                      | Location            |
|-----------------------------|---------------------|
| (1) Smooth muscle           | – Wall of intestine |
| (2) Areolar tissue          | – Tendons           |
| (3) Transitional epithelium | – Tip of nose       |
| (4) Cuboidal epithelium     | – Lining of stomach |

**Q.14** The ciliated epithelial cells are required to move particles or mucus in a specific direction. In humans, these cells are mainly present in :

[NEET 2019]

- (1) Eustachian tube and Salivary duct  
(2) Bronchioles and Fallopian tubes  
(3) Bile duct and Bronchioles  
(4) Fallopian tubes and Pancreatic duct

**Q.15** Goblet cells of alimentary canal are modified from :  
[NEET 2020]

- (1) Compound epithelial cells  
(2) Squamous epithelial cells  
(3) Columnar epithelial cells  
(4) Chondrocytes

**Q.16** Cuboidal epithelium with brush border of microvilli is found in :  
[NEET 2020]

## BIOLOGY

- (1) eustachian tube
- (2) lining of intestine
- (3) ducts of salivary glands
- (4) proximal convoluted tubule of nephron

**Q.17** Which of the following statements wrongly represents the nature of smooth muscle?

[NEET-2021]

- (1) These muscles have no striations
- (2) They are involuntary muscles
- (3) Communication among the cells is performed by intercalated discs
- (4) These muscles are present in the wall of blood vessels

**Q.18** Identify the types of cell junctions that help to stop the leakage of the substances across a tissue and facilitation of communication with neighbouring cells via rapid transfer of ions and molecules.

[NEET-2021]

- (1) Gap junctions and Adhering junctions, respectively.
- (2) Tight junctions and Gap junctions, respectively.
- (3) Adhering junctions and Tight junctions, respectively.
- (4) Adhering junctions and Gap junctions, respectively.

**Q.19** Which of the following is not a connective tissue?

[NEET-2022]

- (1) Blood
- (2) Adipose tissue
- (3) Cartilage
- (4) Neuroglia

**Q.20** Match list – I with list – II

[NEET-2022]

| List – I           | List – II                           |
|--------------------|-------------------------------------|
| (A) Bronchioles    | (i) Dense regular connective tissue |
| (B) Goblet cell    | (ii) Loose connective tissue        |
| (C) Tendons        | (iii) Glandular tissue              |
| (D) Adipose Tissue | (iv) Ciliated epithelium            |

Choose the correct answer from the option given below:

- (1) (A)-(iv), (B)-(iii), (C)-(i), (D)-(ii)
- (2) (A)-(i), (B)-(ii), (C)-(iii), (D)-(iv)
- (3) (A)-(ii), (B)-(i), (C)-(iv), (D)-(iii)
- (4) (A)-(iii), (B)-(iv), (C)-(ii), (D)-(i)

**Q.21** Match List I with List II. List I List II [NEET 2023]

| List – I                        | List – II                          |
|---------------------------------|------------------------------------|
| (A) Mast cells                  | (I) Ciliated epithelium            |
| (B) Inner surface of bronchiole | (II) Areolar connective tissue     |
| (C) Blood                       | (III) Cuboidal epithelium          |
| (D) Tubular parts of nephron    | (IV) Specialised connective tissue |

Choose the correct answer from the options give below:

- (1) A-II, B-III, C-I, D-IV
- (2) A-II, B-I, C-IV, D-III
- (3) A-III, B-IV, C-II, D-I
- (4) A-I, B-II, C-IV, D-III

**Q.22** Given below are two statements:

**Statement I:** Ligaments are dense irregular tissue.

**Statement II:** Cartilage is dense regular tissue. In the light of the above statements, choose the correct answer from the options given below:

[NEET 2023]

- (1) Both Statement I and Statement II are false
- (2) Statement I is true but Statement II is false
- (3) Statement I is false but Statement II is true
- (4) Both Statement I and Statement II are true

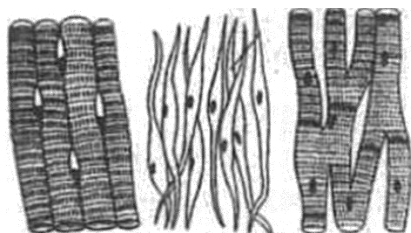
**Q.23** In both sexes of cockroach, a pair of jointed filamentous structures called anal cerci are present on:

[NEET 2024]

- (1) 8<sup>th</sup> & 9<sup>th</sup> segment
- (2) 11<sup>th</sup> segment
- (3) 5<sup>th</sup> segment
- (4) 10<sup>th</sup> segment



**Q.24** Three types of muscles are given as a, b and c. Identify the correct matching pair along with their location in human body: **[NEET 2024]**



(a) (b) (c)

- (1) (a) Skeletal – Biceps,  
(b) Involuntary – Intestine,  
(c) Smooth - Heart
- (2) (a) Involuntary - Nose tip,  
(b) Skeletal – Bone,  
(c) Cardiac - Heart.
- (3) (a) Smooth – Toes,  
(b) Skeletal –Legs,  
(c) Cardiac - Heart.
- (4) (a) Skeletal-Triceps,  
(b) Smooth – Stomach,  
(c) Cardiac - Heart.

**Q.25** Match List I with List II:

**[NEET 2024]**

List I

List II

- |                                       |                                       |
|---------------------------------------|---------------------------------------|
| A. Unicellular epithelium glandular   | I. Salivary glands                    |
| B. Compound epithelium                | II. Pancreas                          |
| C. Multicellular glandular epithelium | III. Goblet cells of alimentary canal |
| D. Endocrine epithelium glandular     | IV. Moist surface of buccal cavity    |

Choose the correct answer from the options given below:

- (1) A-III, B-IV,C-I,D-II
- (2) A-II, B-I,C-IV,D-III
- (3) A-II, B-I,C-III,D-IV
- (4) A-IV, B-III, C-I,D-I

**ANSWER KEY****NEET-FLASHBACK**

|      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Que. | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 |
| Ans. | 2  | 3  | 2  | 4  | 1  | 4  | 1  | 3  | 3  | 2  | 3  | 3  | 1  | 2  | 3  |
| Que. | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |    |    |    |    |    |
| Ans. | 4  | 3  | 2  | 4  | 1  | 2  | 1  | 4  | 4  | 1  |    |    |    |    |    |

