

SSR DEGREE & PG COLLEGE (AUTONOMOUS) NIZAMABAD
PAPER- 2 ANIMAL PHYSIOLOGY
M.Sc. ZOOLOGY
SEMESTER – II, INTERNAL – II
QUESTION BANK

1) Choose the correct options:

1) Which of the following ions is primarily responsible for triggering muscle [C] contraction?

A. Sodium (Na^+) B. Potassium (K^+) C. Calcium (Ca^{2+}) D. Chloride (Cl^-)

2) The functional unit of a striated muscle fiber is called: [D]

A. Sarcolemma B. Sarcoplasmic reticulum C. Myofibril D. Sarcomere

3) Which of the following is responsible for the rapid conduction of nerve impulses in myelinated neurons? [C]

A. Synaptic vesicles B. Schwann cells C. Saltatory conduction D. Graded potential

4) The resting membrane potential in most neurons is approximately: [B]

A. +70 mV B. -70 mV C. 0 mV D. -90mV

5) Mechanoreceptors are sensitive to: [C]

A. Light B. Sound C. Pressure and stretch D. Chemicals

6) Which hormone is secreted by the alpha cells of the pancreas? [C]

A. Insulin B. Somatostatin C. Glucagon D. Amylin

7) The hypothalamus regulates anterior pituitary activity via: [B]

A. Nerve fibers B. Hypophyseal portal system C. Spinal cord connections

D. Direct hormone release

8) Luciferin is: [C]

A. enzyme B. pigment C. light-producing substrate D. light-absorbing molecule

9) Bioluminescence is most commonly found in: [B]

A. Amphibians B. Insects and marine organisms C. Mammals D. Birds

- 10) The “fight or flight” response is mainly mediated by: [C]
A. Cortisol from adrenal cortex B. Estrogen from ovaries
C. Catecholamine’s from adrenal medulla D. Thyroxine from thyroid gland
- 11) Secretions of endocrine glands [C]
a) Chemicals b) Genes c) Hormones d) None
- 12) Study of muscles [A]
a) Myology b) Cytology c) Histology d) None
- 13) The term hormone was coined by [B]
a) Pasteur b) Starling c) Harvey d) None
- 14) Deficiency of insulin causes [A]
a) Diabetes mellitus b) diabetes Insipidus c) a & b d) None
- 15) Adrenal glands are situated on [C]
a) Heart b) Lungs c) Kidneys d) None
- 16) Extracellular bioluminescence’s occurs [B]
a) Inside b) Outside c) a & b d) None
- 17) P^H for bioluminescence is [C]
a) 7.9 b) 7.5 c) 7.6 d) 7.4
- 18) Pericardial organ receives axons from [D]
a) Heart b) Lungs c) Kidneys d) None
- 19) Glial cells are also called [B]
a) Neurons b) Neuroglia c) a & b d) None
- 20) Function of photoreceptors [B]
a) Sound defection b) Vision c) a & b d) None

II) **FILL IN THE BLANKS:**

- 1) The contractile unit of a muscle fiber is called the **Sarcomere**
- 2) **Troponin** is the protein that binds to calcium ions during muscle contraction.
- 3) The energy for muscle contraction is provided by **ATP (Adenosine Triphosphate)**
- 4) During rigor mortis, muscles become stiff due to the lack of **ATP**.
- 5) The insulating sheath around some axons is called the **myelin** sheath.
- 6) The gap between two neurons where neurotransmitters are released is known as the **synaptic cleft**.
- 7) Action potentials are generated when the membrane potential crosses the **depolarization** threshold.
- 8) The hormone **insulin** lowers blood glucose levels.
- 9) The posterior pituitary stores and releases **oxytocin** and **vasopressin**.
- 10) In fireflies, light is produced in specialized cells called **photocytes** cells.
- 11) Astrocytes are **star** shaped cells
- 12) The post commissural organ receives axons from **hypothalamus**
- 13) Neuroendocrine system is well developed in **vertebrates**
- 14) **Luciferin** is responsible for light released by the organism
- 15) Skeletal muscle is also called as **striated muscle**
- 16) The factor which causes stress is called **stressor**
- 17) **Cortisol** is called stress hormone
- 18) Glucagon is secreted by **alpha** cells of **pancreas**
- 19) Adrenalin (or) noradrenalin is also called as **catecholamines**
- 20) Dwarfism is caused by **growth hormone** deficiency

III) ANSWER THE FOLLOWING QUESTIONS :

- 1) Define “sliding filament theory..
- 2) What is Saltatory conduction?
- 3) Define a sensory receptor.
- 4) What is the role of luciferase
- 5) What is the role of ATP in muscle contraction?