



UNIVERSITY OF THE PUNJAB

B.A. / B.Sc. Part-II
Annual Exam - 2017

Roll No.

Subject: Space Science-II

PAPER: A (Atmospheric Physics and Space Science)

TIME ALLOWED: 3 hrs.

MAX. MARKS: 75

Note: Attempt any FIVE questions. All questions carry equal marks.

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|-----|---|----|
| Q-1 | Discuss Normand Theorem, Positive Area, Negative Area and Standard atmosphere? | 15 |
| Q-2 | Discuss Lapse Rate, Inversion and Isothermal Layer? | 15 |
| Q-3 | Discuss Mintra level, Dry Adiabatic Lapse Rate and Saturated Adiabatic Lapse Rate? | 15 |
| Q-4 | What are Hygroscopic and Non Hygroscopic Nuclei and their role in formation in precipitation? | 15 |
| Q-5 | Discuss Low, Medium and High clouds? | 15 |
| Q-6 | Discuss Thunderstorm clouds along with its stages? | 15 |
| Q-7 | Discuss 11 year solar cycle and sunspot activity? | 15 |
| Q-8 | What is Remote Sensing and how can you interpret satellite images from it? | 15 |
| Q-9 | What is the basic principle of rocket. Discuss its propulsion systems? | 15 |

15. Excretion through Malpighian tubules involves active transport of which ions into tubules from the surroundings

- a) Potassium
b) Chloride
c) Sodium
d) All of above

16. Telencephalon is part of the

- a) Hind brain
b) Midbrain
c) Spinal cord
d) Forebrain

17. Point of entry of sperm in frog egg

- a) Animal pole
b) Vegetal pole
c) Gray crescent area
d) None of these

18. Thermoregulatory center in mammals is located in:

- a) Pituitary body
b) Skin
c) Hypothalamus
d) Diencephalon.

19. Muscle contraction is stimulated by

- a) Troponin
b) Tropomyosin
c) Acetylcholine
d) Myosin

20. Protein produces number of calories per gram

- a) 3.3
b) 4.4
c) 4.6
d) 9.5

Q2 Fill in the blanks

$\frac{1}{2} \times 20 = 10$

1. -----includes all of those processes by which an animal takes in, digest, absorbs, stores, and uses food (nutrients) to meet its metabolic needs.
2. In amphibians the cortical changes result in the formation of a -----on the egg, opposite to the point of sperm penetration.
3. Leeches and some insect larvae exhibit -----movement.
4. Pheromones are-----that affect the behavior of another individual of the same species.
5. -----occur when an animal is one sex during one phase of its life cycle and the opposite sex during another phase.
6. A -----consist of one motor nerve fibers and all the muscle fibers with which it communicates.
7. The gallbladder stores the greenish fluid called-----
8. Heat generation by shivering is called -----.
9. The controlling center for ovulation and menstruation is the -----.
10. -----respond to mechanically induced changes.
11. All photoreceptors possess light sensitive pigments. These pigments are -----.
12. The -----is the external covering of an animal.
13. The ----- of echinoderm provides a unique mean of locomotion.
14. The functional unit of a muscle myofibril is the -----.
15. Baleen plates are present in -----.
16. In a chemical synapse two cells communicate by means of a chemical agent called a -----.
17. Flatworm's nervous system contains -----.
18. The endocrine system of a crustaceans, such as crayfish controls functions such as----- and color change.
19. All vertebrates have a ----- circulatory system.
20. The outer protective covering of heart is -----.