



Sample Paper-01

Dropper NEET (2024)

dd/mm/yyyy

## ZOOLOGY

### ANSWER KEY

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

26. (2)
27. (3)
28. (3)
29. (3)
30. (2)
31. (3)
32. (1)
33. (4)
34. (2)
35. (1)
36. (3)
37. (3)
38. (1)
39. (2)
40. (3)
41. (3)
42. (3)
43. (3)
44. (3)
45. (4)
46. (1)
47. (4)
48. (3)
49. (3)
50. (2)



## HINTS AND SOLUTION

1. (3)  
Transitional epithelium is found in renal pelvis, ureters and urinary bladder.
2. (4)  
90-92 % of plasma is water and proteins contribute 6-8% of plasma.
3. (4)
  - Tight junctions provide a barrier which prevents leakage of fluid across epithelial cells.
  - Adherens junctions aid to cement adjacent cells to form a sheet.
  - Gap junctions provide cytoplasmic channels to facilitate communication between adjacent cells.
  - Synaptic junctions help in transmission of information through chemicals.
4. (1)
  - Fibrinogens are needed for clotting or coagulation of blood.
  - Albumins help in osmotic balance.
5. (1)  
Saltation - De vries  
Chemical evolution -Oparin and Haldane  
Reproductive fitness - Darwin  
Life come from pre existing life -Pasteur
6. (1)
  - Cellular barriers include NK cells, macrophages (monocytes) and neutrophils (PMNL).
  - Cytokine barriers include interferons.
  - Physical barriers include mucus membranes and skin.
  - Physiological barriers include HCl in gastric juice, saliva and tears etc.
7. (1)  
ADH promotes water reabsorption in the DCT and collecting duct, resulting in hypertonic urine.
8. (1)  
Aschelminthes are pseudocoelomates.  
Platyhelminthes are acoelomate and Annelida and Arthropoda are coelomates.
9. (1)  
Bulbourethral gland, also called Cowper's gland, either of two pea-shaped glands in the male are located beneath the prostate gland at the beginning of the internal portion of the penis. This helps in lubrication of penis.
10. (4)  
Heart is ventral in position in chordates.
11. (3)  
*Ichthyophis* is a limbless amphibia.
12. (4)  
The factor affecting enzyme activity in given graph is substrate concentration.
13. (1)
14. (1)  
Nearly all of the essential nutrients and 70-80% of electrolytes and water are reabsorbed in PCT segment of nephron.
15. (2)  
When a Neuron is not conducting any impulse i.e, resting, the axonal membrane comparatively more to potassium ions ( $K^+$ ) and nearly impermeable to sodium ( $Na^+$ ) ions.
16. (2)  
When restriction enzymes cut the strand of DNA a little away from the centre of the palindrome sites, but between the same two bases on the opposite strands, then single stranded portions are left at the ends. These overhanging stretches on each strand are called sticky ends.
17. (1) All vertebrates are chordates but all chordates are not vertebrates because notochord is replaced by vertebral column in the adult vertebrates.
18. (3)  
Thyroid hormone regulate calcium level. ADH stimulates the absorption of water and thereby decreased urine production.



19. (2)  
Gonadotropins stimulates the synthesis and secretion of steroid hormones from the gonads.

20. (3)  
Solubility of gases affect the rate of diffusion.  
Solubility of gas  $\propto$  rate of diffusion.

21. (1)  
 $pO_2$  is higher in atmosphere than alveolar air.

22. (3)  
Central part of thick filament, not overlapped by thin filament when a muscle is in relaxed state is called H-zone.

23. (1)  
Menstruation flow last for 3-4 days and usually occur about 14-days after ovulation.

24. (3)  
In the given diagram  
Stage A = Morula  
Stage B = Blastocyst  
Labelling C = Trophoblast  
Labelling D = Inner cell mass

25. (4)  
Sertoli cells are found in seminiferous tubules and provide nutrition to germ cells.

26. (2)  
Oral contraceptive is the most effective method of birth control which prevent ovulation.

27. (3)  
Ideal contraceptive should be reversible.

28. (3)  
Lamarck's theory was based on the hypothesis of used an disuse of organs and inheritance of acquired character.

29. (3)  
Due to the discovery of RNA has enzymatic property in 1980s. The evolution was termed as RNA world.

30. (2)  
Restriction digestion is a process of cutting DNA by restriction enzyme. DNA ligase joins two DNAs.

31. (3)  
Method involving entry of high velocity gold microparticles coated with DNA into plant cells is called biolistic.

32. (1)  
*Brassica napus* seeds accumulate animal protein hirudin. In mature insulin C-chain is absent.

33. (4)  
The secondary lymphoid organs provide the sites for interaction of lymphocytes with the antigen, which then proliferate to become effector cells.

34. (2)  
Malignant tumors do not remain confined to their original location. X-rays and UV rays are potent carcinogens.

35. (1)

Column-I		Column-II	
(A)	Penis	(I)	Male external genitalia
(B)	Glans penis	(II)	Enlarged end of penis
(C)	Foreskin	(III)	Loose fold of skin
(D)	Urethral meatus	(IV)	External opening urethra

36. (3)  

- Glycosuria denotes presence of glucose in the urine. This is observed when blood glucose level rises above 180 mg/100 ml of blood, this is called renal threshold value for glucose.
- Gout is due to deposition of uric acid crystals in the joint.
- Renal calculi are precipitates of calcium phosphate produced in the pelvis of the kidney.
- Glomerular nephritis is the inflammatory condition of glomerulus characterised by proteinuria and haematuria.

37. (3)  
The neural system is composed of highly specialised cells called neurons that can detect and transmit stimuli.



38. (1)  
CO<sub>2</sub> is carried by haemoglobin as carbamino-haemoglobin (about 20-25 per cent), as bicarbonates 70% and 7% in dissolved form.
39. (2)  
If over secretion of growth hormone occur after puberty than individual suffers from acromegaly.
40. (3)  
First mammals on earth were like shrews. *Dryopithecus* were more ape-like and *Ramapithecus* were more man like primate.
41. (3)  
Autoimmunity is caused due to the inability of immune cells in distinguishing between self-cells from non-self and ability of self-cells to damage self-cells.
42. (3)  
Textual based question
43. (3)  
Labia majora is homologous to scrotum. Clitoris is homologous to male penis. Testis are homologous to ovary.
44. (3)  
NCERT XI pg 41 fig 4.6
45. (4)  
*Culex* and *Locusta* are harmful insects.
46. (1)  
Restriction endonuclease cut dsDNA.
47. (4)  
*Bacillus anthracis* is used as bioweapons.
48. (3)  
In case of condom, diaphragm, cervical caps and vaults, ovum and sperms are prevented from physically meeting.
49. (3)  
Striated muscle is characterised by the presence of light and dark bands of protein.
50. (2)  
Primary oocyte within the tertiary follicles grows in size and complete its first meiotic division. It results in a large haploid secondary oocyte and a tiny first polar body.

