



Sample Paper-04

Dropper NEET (2024)

ZOOLOGY

ANSWER KEY

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

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



HINTS AND SOLUTION

1. (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.
2. (3)
 - **Glucose ($C_6H_{12}O_6$)** is a monosaccharide and is a monomer of many polysaccharides such as cellulose, starch, etc.
 - It contains six carbons and has an aldehyde group, so it is known as an aldohexose.
 - It occurs naturally in free or combined form and it is the most important energy resource for all organisms.
3. (3)
Each seminiferous tubule is lined on its inside by two types of cells - male germ cells and Sertoli cells.
4. (3)
Low temperature preserves enzymes in temporarily inactive state whereas high temperature denature enzymes.
5. (2)
The analogous organs show convergent evolution due to similar adaptations which do not support organic evolution.
6. (4)
Drugs - Vinblastin, curcumin
7. (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.
8. (1)
 - Saltation – Hugo de Vries
 - Formation of life was produced by chemical evolution – Oparin and Haldane
 - Reproductive fitness – Darwin
 - Life comes from pre-existing life – Louis Pasteur.
9. (1)
Plasmodium enters the human body as sporozoites through the bite of female *Anopheles* mosquito.
10. (2)
Natural selection can lead to stabilisation, directional change or disruption.
11. (4)
 - Venereal diseases or sexually transmitted diseases or infections are transmitted by sharing of infected needles, surgical instruments with infected person, transfusion of blood or from an infected mother to foetus.
 - Venereal diseases are not transmitted through kissing or inheritance.
12. (1)
Along with hypothalamus, limbic system is involved in regulation of sexual behaviour, expression of emotional reactions and motivation.
13. (4)
 - Pneumonia is an inflammatory condition of the lung affecting primarily the small air sacs known as alveoli.
 - Typically, symptoms include some combination of a productive or a dry cough, chest pain, fever and trouble breathing.
 - The common cold, also known simply as a cold, is a viral infectious disease of the upper respiratory tract that primarily affects the nose. The throat, sinuses and larynx may also be affected.



14. (2)
The final step in the repair cascade is the restoration of the phosphodiester backbone by DNA ligase, an enzyme that seals 3'-OH and 5'-PO₄ ends.
15. (2)
Pills → Prevent ovulation
Condoms → Prevent sperm from reaching the cervix
Vasectomy → Semen contains no sperm
Cu-T → Intra Uterine Device
16. (4)
Amphibians, reptiles, birds and mammals respire through lungs.
17. (1)
 - They are the most abundant and widely distributed in the body of complex animals.
 - They connect and support other tissues.
 - They include diverse tissues such as bones, cartilage, tendons, adipose, and other loose connective tissues.
 - Blood is an example of a fluid connective tissue.
18. (4)
In the alveoli of lungs conditions that are found:
High pO₂, Low pCO₂, and Low H⁺
19. (1)
Myosin releases the ADP and Pi goes back to its relaxed state. A new ATP binds and the cross bridge is broken. The ATP is again hydrolysed by the myosin head and cycle of cross bridge formation and breakage is repeated causing further sliding.
20. (1)
In pBR322, amp^R and tet^R are present. When we ligate a foreign DNA at Pst I site, then recombinant plasmids will lose the resistance to the ampicillin because when we ligate a foreign DNA at the Pst I site of amp^R gene, the recombinant plasmid will lose ampicillin resistance due to insertion of foreign DNA.
21. (4)
Insulin has two peptide chains in active state.
22. (2)
(A)-(III), (B)-(I), (C)-(II), (D)-(V)
23. (2)
Neurohypophysis also known as posterior pituitary, stores and releases two hormones called oxytocin and vasopressin, which are actually synthesised by the hypothalamus and are transported axonally to neurohypophysis.
24. (1)
The organisms which are provided with favourable variation would survive and reproduce, because they are the fittest to face their surroundings.
25. (3)
Sometimes, due to genetic and other unknown reasons, the body attacks self-cells. This results in damage to the body and is called auto-immune disease.
26. (1)
Cry protein is obtained from *Bacillus thuringiensis*.
27. (4)
H zone shortens during muscle contraction.
28. (2)
Each seminiferous tubule is lined by two types of cells called male germ cells (spermatogonia) and sertoli cells.
29. (3)
About 97% of O₂ is transported by RBCs in the blood while remaining 3% of O₂ is carried in a dissolved state through plasma.
30. (3)
Notochord is formed on dorsal side of body during embryonic development. Notochord is a rod like structure derived from mesoderm.



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| <p>31. (1)
Hydra is fresh water form, cylindrical, radially symmetrical and diploblastic.</p> <p>32. (1)
Tight junctions help to stop substances from leaking across tissues.</p> <p>33. (4)
Endothelial lining of blood vessel is formed of simple squamous epithelium.</p> <p>34. (2)
Individual with AB +ve blood group have both A and B antigens on the surface of their RBCs.</p> <p>35. (1)
Renin favours the formation of concentrated urine.</p> <p>36. (3)
Human possesses enucleated RBCs in mature state. But frog blood has both white and red blood cells which are nucleated. Frog cells do not lack platelets.</p> <p>37. (2)
Thoracic cage is formed of ribs, sternum and thoracic vertebrae.</p> <p>38. (1)
The anamnestic response against a pathogen is highly intensified.</p> <p>39. (3)
Due to the accumulation of lactic acid, muscles do not respond to a stimuli after a prolonged previous activity.</p> <p>40. (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.</p> | <p>41. (4)
Ball and socket joint is found in shoulder and hip joint.</p> <p>42. (4)
Receptor sites for neurotransmitters are present on post-synaptic membrane.</p> <p>43. (3)
Innermost layer of adrenal cortex secrete mainly androgenic steroids.</p> <p>44. (2)
Ovary is connected to pelvic wall by ligaments.</p> <p>45. (4)
Analogous organs arise due to convergent evolution.</p> <p>46. (1)
(i) and (iii)</p> <p>47. (2)
DNA cannot pass through a cell membrane as it is a hydrophilic molecule and cell membrane is hydrophobic from inside.</p> <p>48. (1)
Eli Lilly company started selling humulin in the year 1983.</p> <p>49. (3)
Aschelminthes \Rightarrow Developed muscular pharynx and pseudocoelomate.</p> <p>50. (3)
Bones and cartilages are considered as specialised connective tissue.</p> |
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