Sample Paper-05

Dropper NEET (2024)

BOTANY

ANSWER KEY

1.	(4)	26.	(2)
2.	(3)	27.	(4)
3.	(1)	28.	(3)
4.	(1)	29.	(4)
5.	(4)	30.	(2)
6.	(4)	31.	(2)
7.	(1)	32.	(4)
8.	(3)	33.	(1)
9.	(3)	34.	(4)
10.	(4)	35.	(4)
11.	(2)	36.	(3)
12.	(3)	37.	(4)
13.	(3)	38.	(4)
14.	(4)	39.	(2)
15.	(4)	40.	(1)
16.	(4)	41.	(1)
17.	(2)	42.	(1)
18.	(4)	43.	(1)
19.	(3)	44.	(3)
20.	(3)	45.	(3)
21.	(2)	46.	(2)
22.	(2)	47.	(3)
23.	(1)	48.	(2)
24.	(1)	49.	(4)
25.	(3)	50.	(3)

HINTS AND SOLUTION

1. (4)
Glycocalyx provide sticky character to the bacteria.

2. (3)
Phellem are made up of suberised dead cell.

3. (1)
Palisade parenchyma is absent in monocots. Ex *Sorghum*

4. (1)
Decomposition is the process of breaking down organic matter into simple inorganic matter. The rate of decomposition is controlled by chemical and climatic factors. If detritus is rich in lignin and chitin, the decomposition rate is slow. If detritus is rich in nitrogen, the decomposition rate is relatively high. Warm and moist environment favour decomposition whereas low temperature and anaerobiosis inhibit decomposition.

5. (4)
Introduction of the African catfish Clarias gariepinus for aquaculture purposes has become a threat to indigenous catfishes in our rivers. Clarias gariepinus is an alien species for the communities in Yamuna.

6. (4)
Pistil fused together- Syncarpous; Formation of gamete- gametogenesis; Hyphae of higher ascomycetes- Dikaryotic; Unisexual female flower- pistillate.

7. (1)
Cyclosporin A-*Trichoderma*, Statins- *Monascus,*
Clot buster-*Streptococcus*,Butyric acid- *Clostridium*

8. (3)

9. (3)
Structural gene- Codes for enzyme protein, Operator gene-Binding site for repressor protein, Promotor gene- Binding site for RNA-polymerase, Regulator gene- Codes for repressor protein

10. (4)
Two crosses in which the source of gametes are reversed are called reciprocal cross.

11. (2)
Non albuminous seeds have thick and swollen cotyledons.

12. (3)
R and Y genes of Maize lie very close to each other When RRYY and rryy genotypes are hybridized, F_2 generation will show higher number of parental types because R and Y genes are linked genes.

13. (3)
As the man receives Y chromosome from his father so he is normal as the gene of colour blindness is on X chromosome marries a woman who is carrier because she receive only one colour blindness gene so their male children are 50 percent colourblind.

14. (4)
The pedigree show autosomal recessive gene disorder.

15. (4)
Purines- Adenine and guanine, Pyrimidine- Cytocene, thyamine and uracil where uracil is absent in DNA and thiamine's absent in RNA.

16. (4)
Spliceosomes is a large RNA protein complex that catalyses the removal of introns from nuclear premRNA. They are found in eukaryotic cell.

17. (2)
Escherichia coli cells with muated z gene of the lac operon cannot grow in medium containing only lactose at the source of energy because they cannot synthesise functional beta-galctosidase.

18. (4)
During high light intensity, the chloroplasts aligned themselves perpendicular to light to avoid photooxidation. In photooxidation firstly the rate of photosynthesis firstly decreases and further chloroplast disintegrates due to the high intensity of light.
So, the correct option is 'perpendicular to light'.

19. **(3)**
The most common type of ovule of angiosperms have micropyle close to hilum (Anatropous)

20. **(3)**
Filiform apparatus guided the entry of pollen tube into the embryo sac.

21. **(2)**
Largest cell of egg apparatus is egg cell.

22. **(2)**
Population C has birth rate lower than its death rate.

23. **(1)**
The protons formed by splitting of water are released in the lumen of the thylakoids.

24. **(1)**
Kingdom- Animalia
Phylum- Arthopoda
Class- Insecta
Order- Diptera
Family- Muscidae
Genus- *Musca*
Species- *domestica*

25. **(3)**
Reaction centre consist of multiple molecule of chl *a* and chl *b*.

26. **(2)**
In Electron transport system the phosphorylation of ADP into ATP takes place when hydrogen ion moves from intermembranous space to matrix.

27. **(4)**
Francois Jacob and Jacques Monod:Lac operon

28. **(3)**
In CAM plants both C_3 and C_4 enzymes are present in leaf mesophyll cells

29. **(4)**
Compensation point of C_4 plant is lower than C_3 plants

30. **(2)**
Total gain of ATP during aerobic respiration of one molecule of glucose in eukaryotic cell is38 ATP

31. **(2)**
Chief producers in the oceans are diatoms

32. **(4)**
Ciliates differ from all other protozoans in having two types of nuclei

33. **(1)**
Archaebacteria are found in extreme saline water.

34. **(4)**
Viroids differ from viruses in having RNA molecules without protein coat

35. **(4)**
RuBisCO catalyzes the fixation of CO_2. , has oxygenation & carboxylation both activity.andit is the most abundant protein on earth.

36. **(3)**
Red algae found deepest in the sea

37. **(4)**
Zygotic meiosis is characteristic of *Chlamydomonas*

38. **(4)**
The gemmae produced by some liverworts function as an asexual organ.

39. **(2)**
Neurospora is extensively used in biochemical and genetical studies. Mycelium is branched and septate. The asexual spores are conidia produced exogenously on the special mycelium called conidiophores.

40. **(1)**
Flowers are unisexual in cucumber

41. **(1)**
Axile placentation is present in lemon

42. **(1)**
Number of molecules of CO_2 generated in ETS when reduced coenzymes from one glucose molecule are oxidized is zero.

43. **(1)**

Embryogenesis refers to the development of embryo from the zygote. During Embryogenesis zygote undergoes cell division (mitosis) and cell differentiation.

44. **(3)**

Auxin- Indole Acetic Acid
Gibberellin- GA_3
Cytokinin- Kinetin
Dormin- ABA

45. **(3)**

The third name in trinomial nomenclature is subspecies.

46. **(2)**

$$dN/dt = rN\left(\frac{K-N}{K}\right)$$

the growth of organism will ultimately determine by K

47. **(3)**

If we analyse the species-area relationships among very large areas like the entire continents, then slope of line becomes much steeper in the range of 0.6 to 1.2

48. **(2)**

In C4 pathway initial CO_2 fixation occurs in mesophyll cells and final CO_2 fixation occurs in bundle sheath cells.

49. **(4)**

ZW/ZZ type of sex determination is seen in Peacock.

50. **(3)**

The human chromosomes with the highest and least number of genes in them are respectively chromosome 1 and Y chromosome in males.