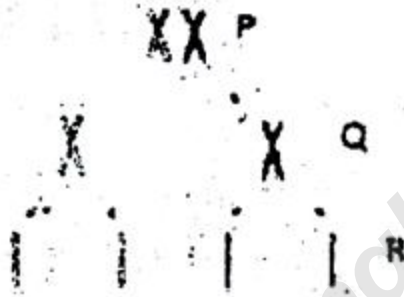


1. ▶

Group-A	Group-B
1. Rice	1. Maize
2. Wheat	2. Sugarcane
3. Barley	3. Sorghum

- What is phosphorylation? 1
- 'Aerobic respiration is incomplete without ETS'- Why? 2
- Differentiate between plants of Group-A and Group-B 3
- "Carbon fixation process is same in both Group-A and Group-B Plants but initial few steps are additional incase of Gropup- B plants"-Explain. 4

2. ▶

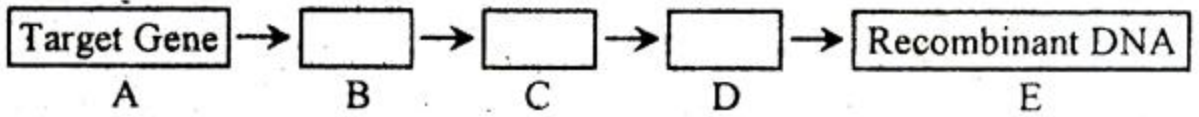


- What is cell cycle? 1
- What are the consequences of uncontrolled mitosis? 2
- Describe the different steps involving with the formation of Q from p. 3
- Discuss the role of indicated cell division with emphasis on maintaining constant chromosome number and creating genetic variation. 4

3. ▶ In biology practical class, a fibrous root of plant is supplied to david and he was said to prepare a T.S. of it. he was also asked to observe this sample.under microscope and to write five features of it.

- What is hydathode? 1
- Mention the four differences between gymnosperm and angiosperm. 2
- Draw the labeled diagram of the sample prepared in the above stem that is observed under microscope. 3
- Classify vascular bundle and explain the vascular bundle of the sample of above stem. 4

4. ►



- What is totipotency? 1
- Why genetic engineering is more effective than the hybridization? 2
- Describe the process from A to E that mentioned in the stem. 3
- Analyze the importance of above shown process in agriculture and medicine. 4

5. ► Protein synthesis is very much like building a house. The master blueprint is DNA, which contains all of required information to build the new protein. The working copy of the master blueprint is called mRNA, which is copied from DNA. The raw materials are amino acids. The construction workers are ribosomes and tRNA molecules.

- What is operon? 1
- How genetic codes are functioning? 2
- How the above mentioned master blueprint is made from DNA? 3
- Without the construction worker protein synthesis is impossible-analyze. 4

6. ►



- What is perianth? 1
- What do you mean by double fertilization? 2
- Discuss the identifying characteristics of the family on which diagram belongs to. 3
- Give a comparative study of the family with the family of Rice. 4

[N.B. Fill the circle of the correct answer with a black ball point pen. Each question bears 1 mark.]

1. Which one makes spindle apparatus at the time of cell division?

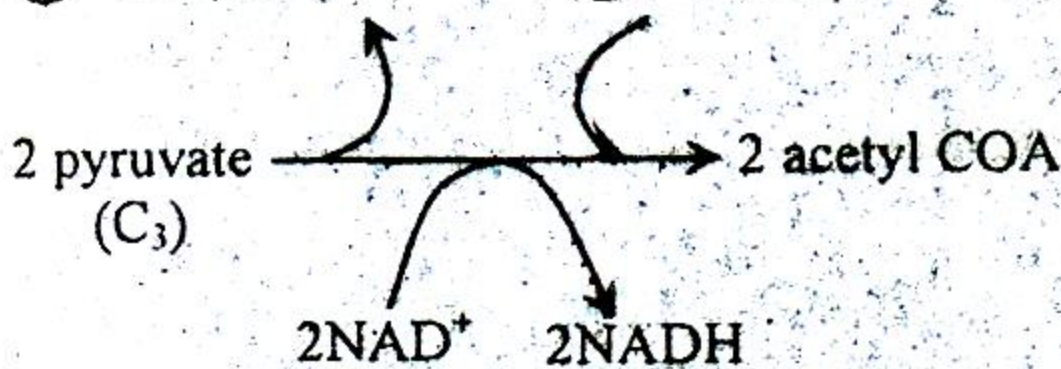
- (a) centriole (b) centrosome
(c) centomere (d) cellulose

2. Which one is responsible for the colour red?

- (a) xanthophyll (b) carotene
(c) phycoeyanin (d) erythroeyanin

3. What is the percentage of DNA in nucleus?

- (a) 10-20 (b) 20-30
(c) 30-90 (d) 40-100



4. Which one is active to accelerate the above reaction?

- i. enzyme
ii. Co-enzyme
iii. co-factor

Which one of the following is correct?

- (a) i & ii (b) ii & iii
(c) i & iii (d) i, ii & iii



5. Which tissue is shown in above figure A?

- (a) parenchyma (b) collenchyma
(c) sclerenchyma (d) scleride

6. Which one is haploid?

- (a) anther (b) pollen grain
(c) filament (d) mothercell

7. The role of minor RNA is-

- i. formation of ribosome
ii. Production of metabolic energy
iii. Giving the structure

Which one of the following is correct?

- (a) i & ii (b) ii & iii
(c) i & iii (d) i, ii & iii

8. In which sub-phase of meiosis synapsis occur?

- (a) Leptotene (b) zygotene
(c) pachytene (d) diplotene

9. What is the name of lipid which contain only alcohol and fatty acid?

- (a) compound lipid (b) simple lipid
(c) phospholipid (d) Derivatives of lipid

10. Outer layer of bacteria is slimy and sticky. The layer-

- i. protect the cell from injury
ii. protect the cell from dehydration
iii. composed of polysacchride or polypeptide

Which one of the following is correct?

- (a) i & ii (b) ii & iii
(c) i & iii (d) i, ii & iii

11. In the carbon assimilation phase of C₄ plants following events take place,

- i. Ribulose Biphosphate first combines with CO₂
ii. Oxaloacetic acid is the first stable product of this assimilatory phase
iii. Calvin cycle goes in the bundle sheath chloroplast

Which one of the following is correct?

- (a) i & ii (b) ii & iii
(c) i & iii (d) i, ii & iii

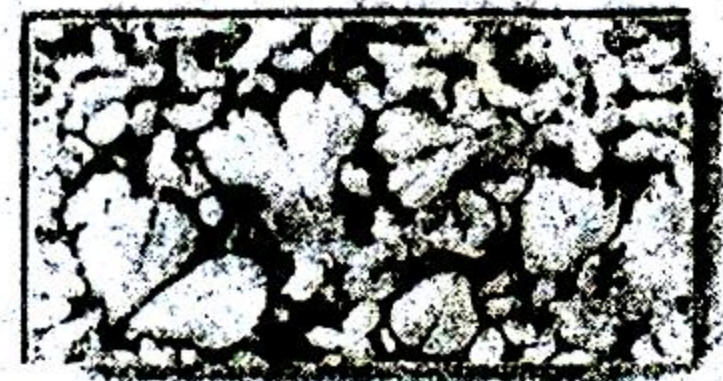


Fig : B

12. Which one is present at the apex of given figure B?

- (a) stomata (b) hydathode
(c) notch (d) gamete

13. Which one is the storage food of algae?

- (a) glycogen (b) starch
(c) fat (d) lignin

14. Which one is present in the head of T₂ phase?

- (a) DNA (b) RNA
(c) Protein (d) Fat

15. Zygote of Ulothrix dividing by which process?

- (a) amitosis (b) mitosis
(c) meiosis (d) fragmentation

16. Which one is the first cell of secondary cell wall?

- (a) gamete (b) zygote
(c) embryo (d) tissue

17. How many layers are there in secondary cell wall?

- (a) 2 (b) 3
(c) 4 (d) 5

18. Which one is absent in the phloem of gymnosperm?

- (a) trachied (b) vessel
(c) companion cell (d) Sieve tube

19. The sorus bearing fern leaves are called-

- (a) sporophyll (b) strobillus
(c) Pinna (d) frond

20. Important characteristics of pachytene are-

- i. tetraivalent pair is formed
ii. repulsion develops between the homologous pair
iii. crossing over takes place between non-sister chromatids

Which one of the following is correct?

- (a) i & ii (b) ii & iii
(c) i & iii (d) i, ii & iii

21. Mesophyll tissue absorb water from

- (a) Xylem (b) Phloem
(c) Bundle sheath (d) Stomata

22. Which one is the main component of cell wall?

- (a) lipoprotein (b) glycoprotein
(c) cellulose (d) hemicellulose

23. The term homologous means-

- (a) refers to replication of the same chromosome
(b) is another name of sister chromatid
(c) must be haploid
(d) pair of same chromosome

24. Fusion of two dissimilar sized gamete is called-

- (a) isogamy (b) anisogamy
(c) apogamy (d) oogamy

25. Which tissue is responsible to increasing the girth of plant?

- (a) primary meristem
(b) secondary meristem
(c) cork cambium
(d) procambium



Fig : C

26. Which one is correct for the above plant in the Figure C?

- (a) flower and fruit can be found
(b) lodicule present
(c) plant monoecious
(d) endosperm triploid

27. In which organelles of the host cell proteins of virus are synthesized?

- (a) mitochondria (b) ribosome
(c) Golgi body (d) nucleus

28. At the time of formation of male gametophyte how many mitosis occur?

- (a) one (b) two
(c) three (d) four

29. Transfer of target pollen to the emasculated flower is termed as?

- (a) cloning (b) crossing
(c) synapsis (d) bagging

30. Which microbe is the key component of genetic engineering?

- (a) Penicillium (b) E-coli
(c) Yeast (d) Virus

31. Which are applicable to plasmid?

- i. intra-nuclear circular DNA
ii. Carrying less number of gene
iii. Strand is double helical

Which one of the following is correct?

- (a) i & ii (b) ii & iii
(c) i & iii (d) i, ii & iii

32. Where Acetyl CO-A formation takes place?

- (a) cytoplasm (b) mitochondria
(c) ribosome (d) lysosome

33. Which one is help in the adaptation of aquatic plant?

- i. absence of cuticle
ii. presence of collenchyma tissue
iii. presence of aerenchyma tissue

Which one of the following is correct?

- (a) i & ii (b) ii & iii
(c) i & iii (d) i, ii & iii

34. Formation of gametocyte in-

- (a) liver (b) Pancreas
(c) RBC (d) Crop of

35. which one is ex-situ conservation?

- (a) Eço-park (b) Safari park
(c) Botanical garden (d) National garden

1	(a)	2	(d)	3	(a)	4	(a)	5	(a)	6	(b)	7	(c)	8	(b)	9	(b)	10	(d)	11	(b)	12	(c)	13	(b)	14	(a)	15	(c)	16	(b)	17	(b)	18	(c)	19	(d)	20	(c)	
21	(a)	22	(c)	23	(d)	24	(b)	25	(b)	26	(c)	27	(b)	28	(b)	29	(b)	30	(b)	31	(c)	32	(b)	33	(c)	34	(c)	35	(c)											