

**DEPARTMENT OF EDUCATION**  
**CENTRAL TIBETAN ADMINISTRATION, DHARAMSHALA**  
**ENTRANCE EXAMINATION-2011.**

**BOTANY**

**Time : 1 hours**

**Max. Marks 50.**

**INSTRUCTIONS:**

There are fifty questions in this paper. All the questions are of Multiple Choice type and carry equal marks. Each question is followed by four responses marked (a), (b), (c) and (d). Select the one, which is the best in each case and record it clearly against the question number on the answer sheets provided with the paper.

More than one response indicated against an item or overwriting in the answer sheet would deem as incorrect response and no mark will be granted on that.

Question paper along with the answer sheet of the paper should be returned to the invigilator after the completion of the paper or when the time is over whichever is earlier.

Roll No. \_\_\_\_\_

Marks obtained by the candidate:

\_\_\_\_\_

**Signature of Examiner**

BOTANY-2011

- Q.1. A diploid female plant is crossed with tetraploid male plant. The ploidy of endosperm will be  
(a) Tetraploidy (b) Diploidy  
(c) Triploidy (d) Hexaploidy
- Q.2. The cause of the "terror of Bengal" was due to enormous vegetative growth at a phenomenon rate of  
(a) Bryophyllum (b) Water hyacinth  
(c) Hydrilla (d) Ceratophyllum
- Q.3. Morphine is extracted from  
(a) *Atropa belladonna* (b) *Cannabis indica*  
(c) *Papaver somniferum* (d) *Cannabis sativa*
- Q.4. Colchicine is used in the production of  
(a) Haploids (b) Somaclonal variation  
(c) Hybrids (d) Polyploids
- Q.5. The improved wheat variety having genes for dwarfness and higher percentage of lysine protein is  
(a) Sarbati sonora (b) Sonalika  
(c) Lerma rojo (d) Kalyan
- Q.6. VAM is important for  
(a) Breaking of dormancy (b) Phosphate nutrition  
(c) Water uptake (d) Retarding flowering
- Q.7. Devine and collego are two trade names for  
(a) Bioherbicides (b) Bioinsecticides  
(c) Biofungicides (d) Natural insecticides
- Q.8. Vertical stratification occurs in  
(a) Savanna (b) Tropical rain forest  
(c) Deciduous forest (d) Coniferous forest

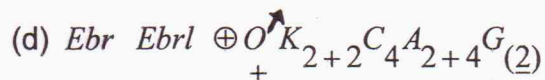
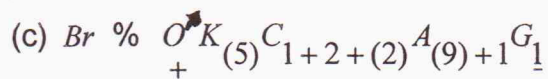
- Q.9. Golden rice is a promising transgenic crop. on cultivation, it will help in
- (a) Alleviation of vitamin A
  - (b) Pest resistance
  - (c) Producing petrol like fuel from rice
  - (d) Herbicide tolerance
- Q.10. Which one of the following represents the sedimentary type of nutrient cycle?
- (a) Phosphorus
  - (b) Carbon
  - (c) Oxygen
  - (d) Nitrogen
- Q.11. Viruses that infect bacteria, multiply and cause their lysis, are called
- (a) Lipolytic
  - (b) Lytic
  - (c) Lysogenic
  - (d) Lysozymes
- Q.12. Prokaryotic organisms devoid of cell wall are
- (a) Actinomycetes
  - (b) Cyanobacteria
  - (c) Mycoplasma
  - (d) Bacteria
- Q.13. Phycoerythrin, chlorophyll 'a' and chlorophyll 'd' are characteristics of
- (a) Chlorophyceae
  - (b) Xanthophyceae
  - (c) Phaeophyceae
  - (d) Rhodophyceae
- Q.14. The sporophyte of funaria always begins development within the
- (a) Antheridium
  - (b) Archegonium
  - (c) Capsule
  - (d) Protonema
- Q.15. Which of the following has vascular tissue, produces spores but does not have seeds
- (a) Bryophyta
  - (b) Gymnosperm
  - (c) Pteridophyta
  - (d) Angiosperms
- Q.16. Which of the following roots contain nitrogen fixing bacteria-Rhizobium?
- (a) Assimilatory roots
  - (b) Nodulated roots
  - (c) Napiform roots
  - (d) nodulose roots
- Q.17. Edible part of litchi fruit is
- (a) Mesocarp
  - (b) Endocarp
  - (c) Fleshy aril
  - (d) Fleshy thalamus

- Q.18. Axillary bud and terminal bud are derived from the activity of  
(a) Lateral meristem (b) Apical meristem  
(c) Intercalary meristem (d) Secondary meristem
- Q.19. The vascular bundles in dicot stem are  
(a) Numerous scattered (b) Arranged in a ring  
(c) Without cambium (d) Surrounded by bundle sheath
- Q.20. Which one of the following is a living mechanical tissue?  
(a) Phloem (b) Parenchyma  
(c) Collenchyma (d) Sclerenchyma
- Q.21. Flagella of prokaryotic and eukaryotic cells differ in  
(a) Location in cell and mode of functioning  
(b) Microtubular organization and type of movement  
(c) Microtubular organization and functioning  
(d) Type of movement and placement in cell
- Q.22. A plant cell has a potential to develop into a full plant. This property of plant cell is called  
(a) Tissue culture (b) Pluripotency  
(c) Totipotency (d) Gene cloning
- Q.23. Agar agar is obtained from  
(a) Gelidium (b) Ulothrix  
(c) Spirogyra (d) Chlorella
- Q.24. Which of the following is hydrogen acceptor?  
(a)  $Co \sim A$  (b)  $NAD^+$   
(c) ATP (d) DNA
- Q.25. Opening and closing of stomata is due to  
(a) Hormonal change in guard cells  
(b) Change in turgor pressure in guard cells  
(c) Hormonal change in subsidiary cells  
(d) Gaseous exchange

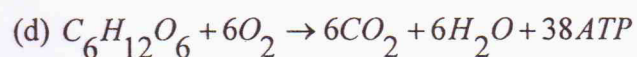
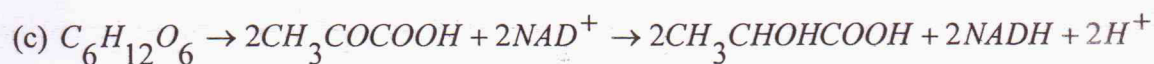
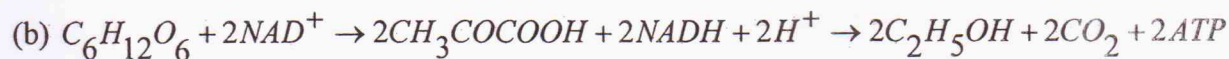
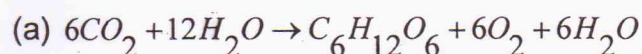


- Q.26. Plants deficient of element zinc, shows its effect on the biosynthesis of one of the following plant growth hormone.
- (a) Auxin (b) Cytokinin  
(c) Ethylene (d) Abscissic acid
- Q.27. At what stage of cell cycle are histone proteins synthesized in a eukaryotic cell?
- (a) During G – 2 stage of prophase (b) During S phase  
(c) During entire prophase (d) During telophase
- Q.28. Prolonged liberal irrigation of agricultural fields is likely to create the problem of
- (a) Acidity (b) Salinity  
(c) Metal toxicity (d) Aridity
- Q.29. First step in photosynthesis is
- (a) Excitation of chlorophyll molecule  
(b) Photolysis of water  
(c) PGAL formation  
(d) Hexose formation
- Q.30. The intermediate product between glycolysis and TCA cycle is
- (a) Pyruvic acid (b) Oxaloacetate  
(c) Glucose 1 – 6 diphosphate (d) Acetyl Co ~ A
- Q.31. Stress hormone is
- (a) Auxin (b) Gibberellins  
(c) Abscissic acid (d) Cytokinin
- Q.32. Cell elongation in internodal regions of the green plants takes place due to
- (a) Ethylene (b) Cytochrome  
(c) Gibberellins (d) Indole acetic acid
- Q.33. Statins are obtained from one of the following
- (a) Saccharomyces cerevisiae (b) Monascus purpurea  
(c) Claviceps purpurea (d) Trichoderma polyspermum
- Q.34. 'Chilgoza' is a fruit obtained from a gymnospermic plant namely
- (a) Pinus roxburghii (b) Cycas revoluta  
(c) Texas buccata (d) Pinus gerardiana

- Q.35. Hybridization through protoplast fusion is known as  
 (a) Clonal selection (b) Emasculation  
 (c) Somatic hybridization (d) Pure line selection
- Q.36. Semi autonomous organelle in the cell is  
 (a) Endoplasmic reticulum (b) Golgi bodies  
 (c) Mitochondria (d) Peroxisome
- Q.37. The water fern 'Azolla' is a biofertilizer because it  
 (a) has rhizobium (b) has cyanobacteria  
 (c) has mycorrhizal roots (d) has anabaena cyanobacteria
- Q.38. In nitrogen cycle, the bacteria which changes nitrates into free nitrogen is  
 (a) Bacillus rimosus (b) Nitrosomonas  
 (c) Micrococcus denitrificans (d) Nitrobacter
- Q.39. Which one of the following is not the feature of gymnosperms?  
 (a) Parallel venation (b) Perennial plants  
 (c) Long and dwarf shoots (d) Xylem with vessels
- Q.40. Floral formula of the family papilionaceae is



- Q.41. Correct equation of an-aerobic respiration is



- Q.42. The Ti plasmid is often used for making transgenic plants. This plasmid is found in
- (a) Rhizobium of the roots of leguminous plants
  - (b) Agrobacterium
  - (c) Yeast as a 2 um plasmid
  - (d) Azotobacter
- Q.43. Initiator (starting) codon in eukaryotes is
- (a) AUG
  - (b) AAG
  - (c) CCU
  - (d) GGC
- Q.44. Haploids are preferred over diploids for mutation studies because in haploids
- (a) Recessive mutations express immediately
  - (b) Dominant mutations express immediately
  - (c) Mutations are readily induced
  - (d) Tissue culture is easy
- Q.45. Heterozygous purple flower is crossed with recessive white flower. The progeny has the ratio
- (a) 75% purple and 25% white
  - (b) 50% purple and 50% white
  - (c) All purple
  - (d) All white
- Q.46. Which one is found only in RNA?
- (a) Cytosine
  - (b) Adenine
  - (c) Uracil
  - (d) Guanine
- Q.47. Arachidonic acid is
- (a) Essential fatty acid
  - (b) Non essential fatty acid
  - (c) Polyunsaturated fatty acid
  - (d) Both a and C
- Q.48. Which one of the following prorogates through lip tip?
- (a) Sprout-leaf plant
  - (b) Marchantia
  - (c) Moss
  - (d) Walking fern

- Q.49. The bacteria pseudomonas is useful because of its ability to
- (a) Transfer genes from one plant to another
  - (b) Decompose a variety of organic compounds
  - (c) Fix atmospheric nitrogen in the soil
  - (d) Produce a wide variety of antibiotics
- Q.50. Five kingdom system of Whittaker is mainly based on
- (a) Nucleus
  - (b) Cell structure
  - (c) Mode of nutrition
  - (d) Complexity of organs





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<b>ANSWER SHEET FOR BOTANY</b>	<b>Roll No.</b>	
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Q.No.	Ans.	Q.No.	Ans.	Q.No.	Ans.	Q.No.	Ans.	Q.No.	Ans.
1		2		3		4		5	
6		7		8		9		10	
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