DEPARTMENT OF EDUCATION
CENTRAL TIBETAN ADMINISTRATION, DHARAMSHALA
ENTRANCE EXAMINATION-2012.

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-2012

Q.1. Linnaeus is credited with

(a) Theory of biogenesis

(b) Binomial nomenclature

(c) Discovery of microscope

(d) Discovery of blood circulation

Q.2. In 5 – kingdoms classification, the kingdom that include the blue green algae, mycoplasma and archaebacteria is

(a) Plantae (b) Fungi

(c) Protista (d) Monera

Q.3. One of the following group of protists is pathogenic and causes disease

(a) Amoeba, Paramoceium, Englena

(b) Chlamydomonas, Chlorella, Noctiluca

(c) Trypanosoma, Entamoeba, Leishmania

(d) Monocystis, Blastodinium, Trichonympha

Q.4. Which one of the following differentiate leaf of dicots from monocots

(a) Parallel venation

(b) Differentiation of palisade and spongy parenchyma

(c) Stomata only on upper side

(d) Stomata both on upper and lower side

Q.5. Pteridophytes differ from bryophytes in having

(a) Vascular tissues

(b) Archegonia

(c) Motile anthrozoids

(d) Alternation of generation

Q.6. The condition where filaments and anthers are fused throughout the entire length is

(a) Synandrous (b) Gynandrous

(c) Protandrous (d) Syngenesius

Q.7. Floral formula of family liliaceae is

(a) $Ebr \oplus \overset{\uparrow}{\underset{+}{O}} K_{(5)} \overline{C_{(5)} A_5} G_{(\underline{2})}$

(b) $Br \quad Ebrl \oplus \overset{\uparrow}{\underset{+}{O}} P_{3+3} A_{3+3} G_{(\underline{3})}$

(c) $Br \ \% \ \overset{\uparrow}{\underset{+}{O}} K_5 C_{1+2+(2)} A_{(9)+1} Gl -$

(d) $\oplus \overset{\uparrow}{\underset{+}{O}} K$ pappus or O $\overline{C_{(5)} A_{(5)}} G_{(\bar{2})}$

Q.8. Cork tissue arise from

(a) Periderm (b) Phellogen

(c) Pelloderm (d) Phellem

Q.9. Axillary and terminal buds are derived from the activity of

(a) Lateral meristem (b) Intercalary meristem

(c) Apical meristem (d) Secondary meristem

Q.10. The major role of minor elements inside living organisms is to play the role of

(a) Binder of cell structure

(b) Co-factor of enzymes

(c) Building blocks of important amino acids

(d) Constituents of hormones

Q.11. If a living cell has to be studied without staining, then one of these microscopes will be the best

(a) Phase contrast microscope

(b) TEM

(c) Electron microscope

(d) Ultra violet microscope

Q.12. In which one of the following, volume of the cell decreases?

(a) Hypotonic (b) Pure water

(c) Isotonic (d) Hypertonic

Q.13. Adenosine triphoshate is

(a) Purine (b) Nucleoside

(c) Nucleotide (d) Nucleosome

Q.14. If a cell has twice as much DNA as in normal functional cell, it means that the cell

(a) Is preparing to divide

(b) Has completed division

(c) Has reached the end of its life span

(d) Has to enter in G zero (G – O) phase

Q.15. The correct sequence of electron acceptors in ATP synthesis is –

(a) Cytochrome a, a_3, b, c (b) Cytochrome b, c, a, a_3

(c) Cytochrome b, c, a_3, a (d) Cytochrome c, b, a, a_3

Q.16. Respiratory quotient of sprouting potato tuber will be –

(a) >1 (b) Zero

(c) <1 (d) 1

Q.17. The site of glycolysis or EMP in a cell is

(a) Mitochondria (b) Peroxisomes

(c) Cytoplasm (d) Nucleus

Q.18. One of the following group of auxins is used as herbicide

(a) IAA , IBA , NAA

(b) 2,4D , 2,4,5T , MCPA

(c) IPA , PAA , IAA

(d) 4 chloro indole acetic acid, Phenyl acetic acid, Napthoxy acetic acid

Q.19. One of the following phytohormone is responsible for delay of senescence (Richmond – Lang effect)

(a) Gibberellins (b) Cytokinins

(c) Abscissic acid (d) Ethylene

Q.20. Which one is not a trait of xerophytes?

(a) Thick cuticle

(b) Well developed mechanical tissue

(c) Aerenchyma

(d) Sunken stomata

Q.21. An ecosystem which can be easily damaged but can recover after sometime if damaging effect stops will be having

(a) High stability and low resistance

(b) Low stability and low resistance

(c) High stability and high resistance

(d) Low stability and high resistance

Q.22. A saprophyte which can act as a parasite is

(a) Facultative saprophyte (b) Obligate saprophyte

(c) Facultative parasite (d) Obligate parasite

Q.23. A free living nitrogen fixing cyanobacterium which can also form symbiotic association with the water fern Azolla is

(a) Chlorella (b) Nostoc

(c) Anabaena (d) Tolypothrix

Q.24. Pyramids of numbers deals with the number of

(a) Species in an ecosystem (b) Subspecies in a community

(c) Indivisuals in a community (d) Indivisuals in a trophic level

Q.25. Guano is a major source of

(a) Nitrogen (b) Phosphorus

(c) Sulphur (d) Both a and b

Q.26. American water plant which has become a troublesome water weed in India is

(a) Cyprus rotundus (b) Trapa latifolia

(c) Eichhornia crassipes (d) Trapa bispinosa

Q.27. Biochemical oxygen demand (BOD) is a measure of

(a) Amount of oxygen needed by green plants during night

(b) Amount of oxygen inseparable combined with hemoglobin

(c) Industrial waste poured into water bodies

(d) Extent to which water is polluted with organic compounds

Q.28. The rate at which light energy is converted into chemical energy of organic molecules in the ecosystems is

(a) Net primary productivity (b) Goss secondary productivity

(c) Net secondary productivity (d) Gross primary productivity

Q.29. Which one of the following is a pair of endangered species?

(a) Garden lizard and Mexican poppy

(b) Rhesus monkey and Sal tree

(c) Indian peacock and Carrot grass

(d) Horn bill and Indian aconite

Q.30. Hashish and ganja are obtained from

(a) Erythroxylon (b) Nicotiana

(c) Papaver (d) Cannabis

Q.31. Which one of the following is a matching pair of a drug and its category?

(a) Amphetamines – stimulant

(b) Lysergic acid diethyl amide – Narcotic

(c) Heroine – Pschycotropic

(d) Benzodiazepum – Pain killer

Q.32. Triticum aestivum, the common bread wheat is

(a) Triploid with 21 chromosomes (b) Tetraploid with 28 chromosomes

(c) Hexaploid with 42 chromosomes (d) Diploid with 14 chromosomes

Q.33. Which one of the following elements helps in nitrogen fixation in the roots of leguminous plants?

(a) Mn (b) Zn

(c) Mo (d) B

Q.34. Farmers have reported over 50% higher yield of rice by using the biofertilizer

(a) Mycorrhiza (b) Azolla pinnata

(c) Cyano bacteria (d) Rhizobium species

Q.35. Black rust of wheat is caused by

(a) Puccinia graminis (b) Ustilago maydis

(c) Albugo candida (d) Plasmopara

Q.36. The best way to obtain virus free plants through tissue culture

(a) Micro propogation

(b) Seed germination under aseptic condition

(c) Shoot tip culture

(d) Seed germination under aseptic condition

Q.37. Which of the following scientists cultured mature anthers of Dhatura innoxia to study physiological changes during meiosis in microspore mother cells?

(a) Dixon and Jolly
(b) Hatch and Slack
(c) Bose and Maheshwari
(d) Guha and Maheshwari

Q.38. The Ti plasmid is often used for making transgenic plants. This plasmid is found in

(a) Rhizobium of roots of leguminous plants
(b) Agrobacterium
(c) Azoto bacter
(d) Yeast

Q.39. Hybridoma technology has been successfully used in

(a) Production of somatic cells
(b) Synthesis of monoclonal antibodies
(c) Synthesis of haemoglobin
(d) Production of alcohol in bulk

Q.40. In a plant, tallness (T) is dominant over dwarfness (t) and red flower (R) is dominant over yellow (r) flower. If a plant with TtRR is crossed with a plant having genotype ttrr

(a) 50% will be tall with red flowers
(b) 75% will be tall with red flowers
(c) All the offspring's will be tall with red flowers
(d) 25% will be tall with red flowers

Q.41. Initiator codon in eukaryotes is

(a) AUG
(b) AAG
(c) UAA
(d) UGA

Q.42. Hargobind Khorana got Nobel Prize for

(a) Determining genetic code
(b) Gene synthesis
(c) Producing disease resistant maize
(d) Discovery of transposons

Q.43. Which of the following is a living fossil?

(a) Moss
(b) Saccharomyces
(c) Spirogyra
(d) Cycas

Q.44. Bacillus thuringiensis *(Bt)* strains have been used for designing novel

(a) Bio fertilizers (b) Bio metallurgical techniques

(c) Bio mineralization process (d) Bio insecticidal plants

Q.45. Maximum biodiversity is found in

(a) Tropical rain forests (b) Temperate rain forests

(c) Mangroove vegetation (d) Tundra

Q.46. Pollen grains are able to withstand extremes of temperature and dessication because their exine is composed of

(a) Cutin (b) Sporopollenin

(c) Suberin (d) Callose

Q.47. Milky water of tender coconut is

(a) Liquid nucellus (b) Liquid endosperm

(c) Liquid female gametophyte (d) Liquid embryo

Q.48. Removal of stamens or anthers of a bisexual flower without affecting female reproductive organs is

(a) Emasculation (b) Emaciation

(c) Anthesis (d) Pollination

Q.49. One of the following reproduces vegetatively with the help of leaves

(a) Dioscorea (b) Frageria

(c) Bryophyllum (d) Eichhornia

Q.50. One of the following is used as anti transprirant

(a) Phenyl mercuric acetate (b) Indole acetic acid

(c) Malic acid (d) Lactic acid

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ANSWER SHEET FOR **BOTANY**	**Roll No.**	

Q.No.	Ans.	Q.No.	Ans.	Q.No.	Ans.	Q.No.	Ans.	Q.No.	Ans.
1		2		3		4		5	
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26		27		28		29		30	
31		32		33		34		35	
36		37		38		39		40	
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46		47		48		49		50	