

RAMAKRISHNA MISSION VIVEKANANDA CENTENARY COLLEGE, RAHARA, KOLKATA
Undergraduate Admission Test 2022: Botany Honours

Full Marks : 150

Time : 2hours

- 1) When transport across membranes occur against concentration gradient, it is called
 a) Active transport b) Passive transport c) Facilitated diffusion d) None of the above

- 2) Plants that grow on rocks or stones are called
 a) Mesophytes b) Lithophytes c) Hydrophytes d) Hygrophytes

- 3) Example of Archaea
 a) *Chlorella* b) *Mycoplasma* c) *Pyrococcus* d) all of the above

- 4) Name the photosynthetic bacteria of the following:
 a) *Nitrobacter* & *Nitrosomonas* b) *Chlorobium* & *Rhodospirillum* c) *Streptococcus* & *Staphylococcus* d) *Chlorobium* & *Clostridium*

- 5) Which one of the following viruses affect the blue green algae
 a) TMV b) HIV c) Cyanophage d) Rhinovirus

- 6) Agar agar produces from
 a) *Oscillatoria* b) *Chlorella* c) *Spirulina* d) *Gelidium*

- 7) Mendel's principle of segregation means that the germ cells always receive
 a) One pair of alleles b) One quarter of the genes c) One of the paired alleles d) Any pair of alleles

- 8) The number of autosomes in man is
 a) 22 pairs b) 11 pairs c) 43 pairs d) 23 pairs

- 9) Genes are made up of:
 a) Histones b) Lipoproteins c) Polynucleotides d) Hydrocarbons

- 10) The term 'gene' refers to:
 a) a portion of RNA b) a linkage group c) a portion of DNA
 d) A sequence of Amino acid

- 11) Prokaryotic genetic system has
 a) DNA but no histones b) Both DNA and histones c) Neither DNA nor histones
 d) Either DNA or histones

- 12) The genetic material of virus is
 a) DNA b) RNA c) DNA and RNA d) DNA or RNA

- 13) SI unit of length is
 a) miles b) meters c) yards d) feet

14) Which is not monocotyledonous plant?

- a) Banana b) Coconut c) Mango d) Rice

15) Which of the following is known as amphibians of the plant kingdom

- a) Algae b) Bryophyte c) Pteridophyta d) Gymnosperms

16) Mycorrhiza is an example of symbiotic relationship between

- a) Algae and fungi b) Algae and higher plant c) Fungi and higher plant
d) Bacteria and higher plant

17) Gram staining involves staining a bacterium with

- a) Crystal violet with iodine b) Crystal violet with cotton blue c) Safranine with iodine
d) Crystal violet with basic fuchsin

18) The DNA sequence 3'-ATCCGATGAC-5' will produce which of the following mRNA

- a) 5'-TAGGCTACTG-3' b) 3'- UAGGCUACUG-5' c) 3'- TAGGCTACTG-5' d) 5'- UAGGCUACUG-3'

19) Crossing over takes place during

- a) Zygotene b) Pachytene c) Leptotene d) Diplotene

20) Which type of chlorophyll is present in all oxygenating photosynthetic organism?

- a) Chlorophyll a b) Chlorophyll b c) Chlorophyll c d) Chlorophyll d

21) Nutritive mode of fungi is

- a) Autotrophic b) Ingestive c) Absorptive d) None of the above

22) Which of the following group of plants are vascular cryptograms?

- a) Bryophytes b) Gymnosperms c) Pteridophytes d) Angiosperms

23) Stele without pith is called

- a) Eustele b) Protostele c) Dictyostele d) Siphonostele

24) Which of the following is/are cytoskeletal elements?

- a) Microtubule b) Microfilament c) Intermediary filament d) All of the above

25) Root nodules are commonly found in?

- a) Leguminous plants b) Parasitic plants c) Epiphytic Plants d) Aquatic plants

26) Companion cells are closely associated with

- a) Trichomes b) Guard cells c) Sieve elements d) Vessel elements

27) Pollination is best defined as

- a) Germination of pollen grains b) Visiting flowers by insects c) Transfer of pollen from anther to stigma d) Growth of pollen tube in ovule

28) "Central dogma" refers to

- a) DNA rRNA Protein b) DNA mRNA Protein c) RNA Protein DNA d) DNA RNA Alcohol

29) The terminal electron acceptor in respiratory electron transport chain is

- a) CO₂ b) H₂O c) Cu d) O₂

30) Which is not a monosaccharide

- a) Glucose b) Fructose c) Maltose d) Galactose

31) Monadelphous stamen found in

- a) *Hibiscus* b) *Solanum* c) *Helianthus* d) All of the above

32) Which one of the following is not a prokaryotic character?

- a) circular chromosome b) absence of double membrane bound organelle
c) absence of histone proteins d) flagella made up of microtubules

33) The subunits of prokaryotic ribosomes are:

- a) 60S + 40S b) 50S + 30S c) 60S + 30S d) 70S + 30S

34) The arrangement of leaves on branches of a tree is known as

- a) Vernation b) Phyllotaxy c) Venation d) Inflorescence

35) Angiosperms differ from gymnosperms in having

- a) Fruits b) Cotyledons c) Tracheids d) Leaves

36) Cyanobacteria is

- a) Nitrogen fixing oxygenic photosynthetic organism b) Symbiotic mycorrhizae
c) Gram positive bacteria d) Saprophytic fungus

37) Which among the following is a brown alga?

- a) *Spirogyra* sp) b) *Volvox* sp) c) *Laminaria* sp) d) *Polysiphonia* sp)

38) Pili of bacteria are useful for

- a) Locomotion b) Asexual reproduction c) Sexual contacts d) Feeding

39) The edible part of a ginger plant is

- a) modified root b) rhizome c) fruit d) None of the above

40) What is a chromatin?

- a) RNA + Protein b) ss DNA + Protein c) ds DNA + Histone Protein
d) None of the above

41) The frequency of a character in a population is found to be increasing when

- a) It is dominant b) It is recessive c) It is adaptable d) It is inheritable

- 42) Closed vascular bundles lack
a) Cambium b) Pith c) Ground tissue d) Conjunctive tissue
- 43) Blue green algae are mainly used as biofertilizers in the field of which crop?
a) Wheat b) Rice c) Maize d) Gram
- 44) Murein is found in the cell wall of
a) Diatoms b) *Spirogyra* c) Eubacteria d) *Chlamydomonos*
- 45) Endomembrane system comprises of:
a) Nuclear membrane, endoplasmic reticulum, Golgi apparatus, lysosomes
b) Mitochondria and Chloroplast c) Nucleus
d) Ribosome and Centrosome
- 46) Extranuclear DNA in eukaryotic cell is found in
a) Nucleus b) Mitochondria c) Ribosomes d) Endoplasmic Reticulum
- 47) Capitulum inflorescence is found in
a) Asteraceae b) Solanaceae c) Malvaceae d) Rosaceae
- 48) The end product of glycolysis in aerobic respiration is
a) Pyruvic acid b) Acetic acid c) Oxaloacetic acid d) Palmitic acid
- 49) Photolysis of water during photosynthesis occurs in the
a) PS I b) Cytochrome b6f complex c) PS II d) ATP synthase complex
- 50) Malic acid is stored inside the vacuole during the
a) C3 cycle b) C2 cycle c) C4 pathway d) CAM pathway