

# BOARD OF INTERMEDIATE EDUCATION, KARACHI

## H.S.C. Annual Examinations 2021

### (MODEL QUESTION PAPER)

#### BOTANY PAPER-I (Science Pre-Medical Group)

Total Duration: 01 Hour 30 minutes

Total Marks: 45

Time Allowed: 30 Minutes

SECTION "A" (M.C.Qs)

Max Marks: 22

**Note:** This Section consists of **22-part** questions and all are to be answered.

**Q1. Choose the correct answer for each from the given option:**

- (i) The term "Cell" was first used by:
- ◆ Robert Brown 1965
  - ◆ Robert Hooke 1556
  - ◆ Robert Brown 1865
  - ◆ Robert Hooke 1665
- (ii) Which of the following is the characteristic of all fungi?
- ◆ Autotrophic
  - ◆ Saprophytic
  - ◆ Parasitic
  - ◆ Heterotrophic
- (iii) This type of Endocytosis involves ingestion of solid materials:
- ◆ Phagocytosis
  - ◆ Exocytosis
  - ◆ Pinocytosis
  - ◆ Solidocytosis
- (iv) Among the followings, this one is prokaryote:
- ◆ Euglena
  - ◆ Nostoc
  - ◆ Chlamydomonas
  - ◆ Ulva
- (v) New Ribosomes are assembled in the:
- ◆ Golgi Apparatus
  - ◆ Nucleolus
  - ◆ Mitochondria
  - ◆ Endoplasmic Reticulum
- (vi) Which of the following is an example of liverworts?
- ◆ Funaria
  - ◆ Adiantum
  - ◆ Marchantia
  - ◆ Anthoceroce
- (vii) C<sub>4</sub> plant forms \_\_\_\_\_, a four carbon compound as its first product:
- ◆ PEP
  - ◆ Malate
  - ◆ Oxaloacetate
  - ◆ Pyruvate
- (viii) Virus was discovered in the year:
- ◆ 1840
  - ◆ 1898
  - ◆ 1838
  - ◆ 1892
- (ix) This fungus utilized in Baking industry:
- ◆ Yeast
  - ◆ Penicillium
  - ◆ Mushroom
  - ◆ Deutromycota

- (x) It is a Heterosporous plant:
- ◆ Rhynia
  - ◆ Moss
  - ◆ Selaginella
  - ◆ Lycopodium
- (xi) Final tool helping in classifying organism is:
- ◆ Homology
  - ◆ Genetics
  - ◆ Analogy
  - ◆ Biochemistry
- (xii) This organelle is known as suicide sac:
- ◆ Peroxisomes
  - ◆ Lysosome
  - ◆ Glyoxisomes
  - ◆ Ribosome
- (xiii) Plant like protoctists are:
- ◆ Algae
  - ◆ Slime mold
  - ◆ Fungi
  - ◆ Protozoa
- (xiv) The primary electron acceptor in PS-II is:
- ◆ Plastoquinone
  - ◆ Plastocyanin
  - ◆ Phaeophytin
  - ◆ FeS
- (xv) Energy is required for:
- ◆ Active transport
  - ◆ Diffusion
  - ◆ Facilitated transport
  - ◆ All of these
- (xvi) In stem, localized regions of loosely arranged cells with intercellular spaces is called:
- ◆ Cuticle
  - ◆ Lenticels
  - ◆ Stomata
  - ◆ Sclerenchyma
- (xvii) Virus is nutritionally:
- ◆ Symbiont
  - ◆ Saprophyte
  - ◆ Facultative parasite
  - ◆ Obligate parasite
- (xviii) Mycelium is a term used for:
- ◆ Mass of spores
  - ◆ Zoospores
  - ◆ Mass of sporangia
  - ◆ Mass of hyphae
- (xix) In anaerobic respiration how many ATP are produced?
- ◆ 36
  - ◆ 38
  - ◆ 02
  - ◆ 04
- (xx) The total stem parasite is:
- ◆ Loranthes
  - ◆ Viscum
  - ◆ Utricularia
  - ◆ Cuscuta
- (xxi) The primitive vascular plants (Rhynia) were widespread about:
- ◆ 300 million year ago
  - ◆ 500 million year ago
  - ◆ 400 million years ago
  - ◆ 600 million year ago
- (xxii) Oxygen ( $O_2$ ) Produced during photosynthesis comes from:
- ◆  $CO_2$
  - ◆ Both
  - ◆  $H_2O$
  - ◆ Photorespiration

**Time: 01 hour**

**Total Marks: 23**

**SECTION 'B' (SHORT-ANSWER QUESTIONS)**

**Marks: 14**

**Q2. Attempt any Six-part questions. Each question carries one mark. Give answer not more than two lines.**

- (i) Give two difference between Prokaryotes and Eukaryotes.
- (ii) Why lysosomes are called suicide sacs? **OR** Name any two diseases caused by Virus.
- (iii) Define any two of the followings:
  - ◆ Double Fertilization
  - ◆ Homosporous
  - ◆ Diffusion
  - ◆ Pili
- (iv) On what basis Fungi are classified? **OR** Write the molecular formula of chlorophyll a & b.
- (v) Why protista considered as polyphyletic kingdom?
- (vi) Why yeast is placed in fungi, while it is unicellular?
- (vii) Name three methods of genetic recombination in Bacteria.
- (viii) What is the role of potassium in transpiration? **OR** Why do insectivorous plant use insects as food?
- (ix) Why ATP called as energy currency?

**Q3. Attempt any Four-part questions. Each question carries two marks. Answer should not exceed 5 to 6 lines.**

- (i) Write four important events takes place during light reaction of photosynthesis. **OR** Write note on Diversity among protista.
- (ii) Briefly describe the fluid mosaic model of plasma membrane.
- (iii) Describe the concept of species and taxonomic hierarchy of biological classification? **OR** Point out two problems with having two kingdom system.
- (iv) Write postulates of cell theory **OR** Salient features of Cyanobacteria.
- (v) Write structure and functions of the following: (any one)
  - ◆ Mitochondria
  - ◆ Nucleus
- (vi) Draw a well labelled diagram of the followings (any one):
  - ◆ Bacteriophage virus
  - ◆ Bacterium
  - ◆ Fern prothallus

**SECTION "C" (DETAILED-ANSWER QUESTIONS) Max Marks: 09**

**Note:** Attempt **any two** question from this section all question carries equal marks.

- Q4.** Explain the life cycle of Moss (No diagram required) **OR** Describe adaptive characteristics of Bryophytes to land habitat.
- Q5.** Describe in detail the process of Glycolysis **OR** Light independent reaction (C<sub>3</sub> cycle) of photosynthesis.
- Q6.** Define Ascent of sap. Describe root pressure theory and cohesion-tension theory.
- Q7.** Define Transpiration and its types. Describe mechanism of stomatal transpiration.