QB365

Model Question Paper 1

11th Standard CBSE

Biology

Reg.No. : | | | | | | |

Time : 02:00:00 Hrs

Total Marks : 100

Section-A

1) How do you living things grow? **1**

2) Carolus Linnaeus is considered as father of taxonomy. Name two other botanists known for their contribution to the field of taxonomy. **1**

3) What does ICZN stand for? **1**

4) Which is the largest botanical garden in the world? Name a few well-known botanical gardens in India. **1**

5) How is diversity in living world related to taxonomy? **1**

6) Who coined the term Protista? **1**

7) Give the names of the kingdom in three kingdom classification. **1**

8) Which biologist proposed the kingdom-Monera? **1**

9) In which group all prokaryotes were kept in five kingdom system? **1**

10) Give the name of a fungus which causes rust diseases. **1**

11) Which are the most advanced group of fungi? **1**

12) What are the types of mycorrhiza? **1**

13) Give the name of the classes of Kingdom - Plantae. **1**

14) Why virus cannot grow on non-living culture medium? **1**

15) In which five kingdom classification of Whittaker, some acellular organisms are not included. What are these organisms? **1**

16) Which unicellular plants are included in Kingdom - plantae? **1**

17) Write the part of female gametophyte of angiosperm. **1**

18) Why digestive tract of flatworms and coelenterates is called incomplete? **1**

19) Give example of two unisexual animals **1**

20) How are viroids different from viruses? **1**

Section-B

21) What are seed located in gymnosperm? **2**

22) List out the features which distinguish living things from non-living things. **2**

23) Non-living things also grow. Explain the statement with example. **2**

24) Write examples of two species, each belonging to same genera. **2**

25) In which virus two single RNA strands are present? What is the role of reverse transcriptase? **2**

26) Plants are autotrophic.Can you think of some plants that are partially heterotrophic? **2**

27) Neurospora, an Ascomycetes fungus has been used as a biological tool to understand the mechanism of plant genetics much in the same way as Drosophila has been used to study animal genetics. What makes Neurospora as a genetic tool? **2**

28) Suppose you accidently find an old preserved permanent slide without a label. In your effort to identify it, you place the slide under microscope and observe the following features **2**

(i) Unicellular

(ii) Well-defined nucleus

(iii) Biflagellate, one flagellum lying longitudinally and other transversely.

What would you identify it as? Can you name the kingdom it belongs to ?

29) In which groups animals, closed circulatory system is found? Why blood flows with faster speed and high pressure in these animals? **2**

30) List out the different exoskeletal structures present in different animals. **2**

31) What do you understand by alternation of generation in cnidarians? **2**

32) List out the three characteristics of modified stem bulb with examples. **2**

33) Define the term bud. Write the basis of their classification? Name their types. **2**

34) Draw a well-labelled diagram of sclerenchyma. **2**

35) Explain the following floral formula and to which it belongs $Ebr \oplus \quad K_{2+2}C_4A_{2+4}G_{\underline{(2)}}$ **2**

36) Give differences between cartilaginous and bony fishes **2**

37) Distinguish between dense regular and dense irregular connective tissue **2**

38) Describe the cortex regionof dicot root? **2**

39) List out the significance of secondary growth. **2**

40) What is the nature of xylem elements in spring and autumn wood? **2**

Section-C

41) Los out the important features of hynaline cartilage. **5**

42) How is the lymph formed What is its composition **5**

43) Distinguish between Chordates and Non-Chordates **5**

44) Expalin the process of secondary growth in the stems of woody angiosperms.What is its significance? **5**

45) Write difference between ascocarp and basidiocarp **5**

46) Distinguish between a male cockroach and female cockroach. **5**

47) Describe briefly the body wall of sponges. **5**

48) Describe modification of stem with suitable examples. **5**

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Section-A

1) Living things grow either by increase n cell number or increase in cell mass. **1**

2) George Bentham and Joseph Dalton Hooker. **1**

3) ICZN stands for International Code of Zoological Nomenclature. **1**

4) **1**

Largest botanical garden in the world is Royal Botanical Garden, Kew (London). Some well-known botanical gardens in India are (i) National Botanical Garden, Lucknow (ii) Lloyed Botanical Garden, Darjeeling (iii) Indian Botanical Garden, Sibpur, Kolkata

5) The spectrum of diversity in the living world can be known only through the study of taxonomy. **1**

6) Ernst Haeckel (1866) **1**

7) Plantae, Protista, and Animalia **1**

8) Copeland (1956). **1**

9) Monera **1**

10) Puccinia graminis tritici causes black stem rust of wheat. **1**

11) Basidiomycetes (the club fungi) are the most advanced and most commonly seen fungi. **1**

12) Mycorrhiza can be two types (i) Ectomycorrhiza (ii) Endomycorrhiza **1**

13) Algae, Bryophytes, pteridophytes, gymnosperms and angiosperms. **1**

14) **1**

A virus cannot grow on non-living culture medium because it needs living cells for its metabolism and multiplication.

15) Viruses, viroids, and lichens are not included in the five kingdom classification. **1**

16) Kingdom - Plantae includes unicellular members of green algae e.g., Chlamydomonas Chlorella **1**

17) **1**

Female gametophyte has one oospore or egg and two helping cells or synergies for attracting the pollen tube.

18) Because they have single opening both for ingestion and egestion **1**

19) Frog and birds. **1**

20) Differences between viroids and viruses are **1**

Viroids	**Viruses**
Protein coat is not present	Protein coat is present
These are short segments of free RNA which are infectious	The genetic/infectious material is RNA or DNA
RNA is small	RNA is comparatively larger in size.

Section-B

21) Seed lie naked or exposed on the surface of megasporophyll **2**

22) The living things possess following features, which are not present in non - living things **2**

(i) growth and metabolism

(ii) reproduction

(iii) ability to sense stimuli (consciousness)

(iv) ability to self-replicate and self-organise

23) **2**

Non- living things also show growth, e.g., a mountain or sand dune grows by accumulating material externally on surface. But, this growth is considered as external growth in comparison to the growth of living things which is internal.

24) Panthera leo (lion), P.pardus (leopard) **2**

Solanum tuberosum (potato), S.melanogena (brinjal).

25) **2**

HIV has two single RNA strands in its nucleoid. Reverse transcriptase enzyme catalyses the formation of DNA from RNA. It is found in some RNA viruses called retroviruses, e.g., HIV

26) **2**

Plants are generally autotrophic.However, some plants like Nepenthes, Utricularia, Venus fly trap and some parasites like Cuscuta are examples of partially heterotrophic plants.They supplement their nitrogen requirement by capturing and digesting insects.

27) **2**

Neurospora is often called Drosophila of plant kingdom. It is haploid in nature which helps in immediate expression of every mutation. Beadle and Tatum used it as an experimental tool to find out that genes express their effect through synthesis of specific enzymes.

28) Dinoflagellate, kingdom-Protista. **2**

29) **2**

Closed circulatory is found in most annelids and all vertebrates. In these groups blood flows at faster speed and high pressure due to force provided by the rythmic contraction and relaxation of heart muscles.

30) Different exoskeletal structures present in different animals are **2**

Arthropods	**Chitinous plates called sclerites**
Molluscs	Calcareous
Reptiles	Epidermal scales
Brirds	Epidermal feathers
Mammals	Epidermal hair, nails, claws, horns, and hoofs.

31) **2**

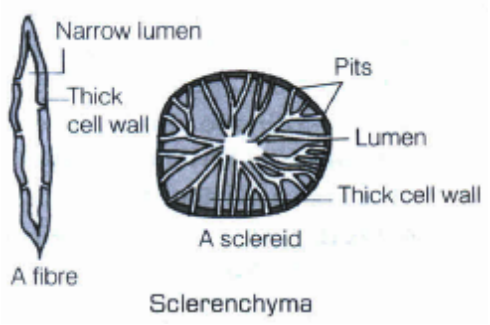
The cnidarians complete their life cycle through two phases,i.e., asexually reproducing polyp phase and sexually reproducing medusa phase.Those cnidarians which exist in both forms exhibit alternation of generation(metagenesis).

32) **2**

Modified stem bulb is highly reduced disc-like stem.It bears fibrous adventitious roots at its base.Leaf bases form bultslets that grow into new plant,e,g.,Allium cepa(onion).

33) Hint Bud is defined as condensed embryonic shoot. **2**

34) **2**



35) It belongs to mustard **2**

36) Differences between cartilaginous and bony fishes **2**

Cartilaginous Fishes (Chondrichthyes)	**Bony Fishes** (Osteichthyes)
They are always marine	They may be marine or freshwater
Skin is covered by small placoid scales	Skin is covered with large cycloid scales
Endoskeleton is cartilaginous	Endoskeleton is partly or completely bony
Gills slits are not covered by gill covers	Gill slits are covered by gill covers
Swim bladder is absent	Swim bladder is present
Tail fin is asmmetrical	Tail fin is symmetrical
Excretory matter is urea	Excretory matter is ammonia
They exhibit sexual dimorphism	Sexual dimorphism is usually present
Mostly viviparous	Usually oviparous
e.g, sharks, skates	e.g, Labeo, Catla, Hilsa

37) **2**

Differences between dense regular and dense irregular connective tissue are given below

dense regular connective tissue	dense irregular connective tissue
The cells and fiber are arranged compactly and the orientation of fiber shows a regular patten	The cells and fiber are arranged compactly but, the fiber are not oriented in a regular patten
The collagen fiber bundles are in parallel rows	The fibers run in different direction

38) **2**

The cortex consists of several layers of thin walled parenchyma cells. Intercellular spaces are small but abundant.The cortical cells can be rounded , oval or angular.

They store food.The major function of the cortex in the root hair zone is conduction of water and minerals from the epiblema to the interior of the root.

39) Significance of secondary growth are as follows **2**

(i) It adds girth to the plant.

(ii) It produces a corky bark around the tree trunk that protects the interior of the plant.

(iii) It adds new conducting tissues for replacing old non-functioning tissues.

40) **2**

Springwood consists of larger and wider xylem elements . The autumn wood is dark coloured and of higher density. It contains compactly arranged smaller and narrower elements which have comparitevely arrange smaller and narrower elements whcih have comparitively thicker walls.In autumnwood,tracheids and fibres are more abundant than those found in the springwood.

Section-C

41) Some important features of hyaline cartilage are **5**

(i)It is translucent

(ii)It is glassy-bluish green

(iii)It is not mineralised

(iv)It does not have white or yellow fibers

42) **5**

Lymph is derived from the tissue fluid by means of fine and irregular lymph capillaries . Through the composition of the lymph varies about 94% of the lymph is water and 6% is dissolved substances, i.e, proteins, fat drops, carbohydrates, non-protein nitrogenous wastes, hormones, inorganic salt, gases, ect.

43) **5**

Differences between Chordates and Non-Chordates are given below

Chordates	**Non-Chordates**
Notochord is present atleast in some stages of development	Notochord is absent
Central nervous system is dorsal, hollow, single and non-ganglionated	Central nervous system is ventral, solid, double and gangliolated
Gill slits present on lateral side of pharynx in sum stages or throughout the life	Gill slits are absent
Tail is present in some stages and throughout the life	Tail is generally absent
Heart is ventral	Heart is dorsal
Haemoglobin is present in RBCs	It is present in plasma

44) 5

Secondary growthg in stems of woody angiosperms occurs by two types of cambia, i.e., vascular cambium and cork cambium

(i) Vascular Cambium Ceratin cdells of medullary rays become meristematic to form interfasicular cambium.The fascicular cambium and the interfasicular join to form a complete ring called cambial ring. The cells of the cambial ring undergo mitotic divisions and produce secondary phloem on its outer side and secondary xylem on its inner side.

At places , vascular cambium possess ray intials.They form vascular rays, phloem rays in seconadry phloem and wood rays in secondary xylem.

As new secondary phloem becomes functional , the previous older phloem gets crushed. Secondary xylem or wood persists.As a result wood grows with age in the form of annual rings.

In each annual ring , there is wide or broader spring or early wood or spring wood and narrow autumn or late wood.

In old stems, the central part of wood becomes non-functional and dark coloured due to presenceof tyloses and deposition of resins , gums, and tannins.It is called duramen or heartwood.The outer functional wood is called sapwood .

(ii)**Cork Cambium** As the stem continues to increase in grith due to the activity of vascular cambium the ouiter cortical and epidermal layers get broken and need to be replaced to provide new protective cell layers.In this way , cork cambium or phellogen develops in the cortex region .Phellogen cuts of cells on both sides.

The outer cells differentiate into cork or phellem while, the inner cells differentiate into cork or phellem while , the inner cells differentiate into secondary cortex or phelloderm.Due to activity of cork cambium, pressure builds up on the remaining layers peripheral to phellogen and dultimately these layers peripheral to phellogen nad ultimately these layers die and sloghed off.

At places , aerating pores called lenticules develop, which have loosely arranged complementary cells.

Significance of secondary Growth

(i) It repalces old non-functional tissues.

(ii) It provides fireproof, insect proof and insulating cover around the older plant parts.

(iii) Commercail cork is a product of secondary growth .

(iv) Wood is the product of secondary growth.

45) Difference between ascocarp and basidiocarp are given below 5

Ascpcarp	**Basidiocarp**
It is a fructification found in Ascomycetes.	It is a fructification found in Basidiomycetes.
It is simpler in construction.	It is more elaborate in construction.
Ascocarp contains numerous asci.	Basidiocarp contains several basidia.
Ascus is generally aseptate.	Basidim may be septate or aseptate.
An ascus form eight ascocarps.	A basidium, produces four basidiospores.
These are formed endogenously.	These are formed exogenously.

46) Differences between male and female cockroach are **5**

Male Cockroach	Female Cockroach
Abdomen is long and narrow	Abdomen is short and broad
All nine sterna are visible	Only seven sterna are visible
Anal styles are present	Anal styles are absent
7 th tergum coves 8th tergum	7th tergum covers 8th and 9th terga.
Brood pouch is absent	B
Antennae are longer in size	Antennae are smaller in size
Wings extend beyond the tip of abdomen	Wings extend upto the end of abdomen

47) **5**

The body wall of a common sponge consists of three layers which are

(i) **Pinacoderm** (dermal layer) It is an outer cellular layer which consists of

(a) flattened pinacocytes

(b) oval porocytes

(ii) **Choanoderm** (gastral layer) It is inner cellular layer consisting of highly specialised flagellated cells called choanocytes or collar cells.

(iii) **Mesoglial layer** (mesenchyme) It is a non-cellular layer found in between pinacoderm and choanoderm.It has fine dispersed spongin fibres and numerous spicules.It also contains amoebocytes of both pinacoderm and choanoderm.

Amoebocytes are modified into following cells

(a) Archaeocytes (totipotent cells)

(b)Trophocytes (nurse cells)

(c) Thesocytes

(d)Gland cells

(e)Collencytes

(f)Myocytes

(g)Germ cells

(h)Chromocytes

(i)Phagocytes

48) **5**

Modifications of stem are as follows

(i) Underground stems of some plants such as grass and strawberry, etc. spread to new riches and when older parts die

(ii) In Pistia and Eichhornia a lateral branch with short internodes and each node bearing a rosette of leaves and a tuft of roots is found

(iii) Stolons or runners help in vegetative propagation in jasmin and grass respectively.