



**ZIAUDDIN UNIVERSITY**  
EXAMINATION BOARD

**RESOURCES FOR**  
**“HSC-II BOTANY**  
**ZUEB EXAMINATIONS 2021**



## **PREFACE:**

The ZUEB examination board acknowledges the serious problems encountered by the schools and colleges in smooth execution of the teaching and learning processes due to sudden and prolonged school closures during the covid-19 spread. The board also recognizes the health, psychological and financial issues encountered by students due to the spread of covid-19.

Considering all these problems and issues the ZUEB Board has developed these resources based on the condensed syllabus 2021 to facilitate students in learning the content through quality resource materials.

The schools and students could download these materials from [www.zueb.pk](http://www.zueb.pk) to prepare their students for the high quality and standardized ZUEB examinations 2021.

The materials consist of examination syllabus with specific students learning outcomes per topic, Multiple Choice Questions (MCQs) to assess different thinking levels, Constructed Response Questions (CRQs) with possible answers, Extended Response Questions (ERQs) with possible answers and learning materials.

## **ACADEMIC UNIT ZUEB:**

## 1: Multiple Choice Questions:

The Multiple-Choice Questions with a stem, correct answer and 3 distractors or plausible wrong answers format is designed to assess the content and thinking of students from; R (Remembering); U(Understanding) and A (Applying, Analyzing, Evaluating, Creating). The questions are also classified into three difficulty levels accordingly; D (DIFFICULT), M (MODERATE), E (EASY)

### HOW TO ATTEMPT AN MCQ:

#### MCQ:

- EACH MCQ HAS FOUR OPTIONS, A, B, C AND D. SELECT ONE OPTION AS THE BEST ANSWER AND FILL IN THE CIRCLE OF THAT OPTION, FOLLOWING THE INSTRUCTIONS GIVEN BY THE INVIGILATOR.
- USE BLACK PEN/PENCIL TO FILL IN THE CIRCLE.

Correct Way	Wrong Ways		
1 <input type="radio"/> a <input type="radio"/> b <input checked="" type="radio"/> c <input type="radio"/> d	1 <input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d	2 <input type="radio"/> a <input type="radio"/> b <input checked="" type="radio"/> c <input type="radio"/> d	3 <input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d

S#	MCQ'S MATERIAL	KEY	CL	DL
1.	Choose the correct answer for each from the given option: a) These kinds of tissues become dead on maturation. a. Parenchyma b. Collenchyma c. Sclerenchyma	C	U/R	E
2.	Herbivory is the process of eating by herbivores animals. a. Animals b. PLANTS c. FISHES d. Both of these	B	K	M
3.	Transfer of pollen grains from anther to stigma is called a. Fertilization b. Apomixis c. Pollination d. None	C	K	E
4.	By counting the annual ring, of plant may be calculated. a. Age b. Size	A	U/R	E

	c. Girth d. All			
5.	Homeostasis is maintained by three processes osmoregulation, excretion and a. Thermoregulation b. Thermostatics c. Guttation d. None of them	A	U	E
6.	The region of earth, where life exists is known as a. Atmosphere b. Biosphere c. Lithosphere d. Hydrosphere	B	U/R	E
7.	In the biosphere energy is received from a. The Sun only b. The interior of the earth only c. The sun and interior of the earth d. Work	C	K	M
8.	Plants growing in aquatic habitat are called a. Xerophytes b. Halophytes c. Hydrophytes d. Bryophytes	C	K	E
9.	The male reproductive parts of a flower, the stamens are collectively known as (a) Androecium (b) Filament (c) Anther (d) Gynoecium	A	U/R	E
10.	Ripening of fruit is a key role of a. Melatonin b. Melanocytes c. Methane d. Ethylene	D	U	E
11.	The particular arrangement of chromosomes of an individual is called a. Autotype b. Stereotype c. Karyotype d. Chronotype	C	K	M
12.	The bead like structure on the chromosomes are called a. Kinetochore b. Chromomeres c. Centrioles d. Centromeres	B	K	E
13.	Amitosis usually occurs in a. Bacteria, tumor or cancer cells b. bird cells c. Fish cells d. Plants	A	U/R	E
14.	If a dominant character hides a recessive character in F1 generation, the phenomenon is called a. Law of Dominance b. Law of incomplete dominance c. Co-dominance d. None	B	U	E

15.	The study of development from egg stage to birth is called (a) Entomology (b) Embryology (c) Embryo ecology (d) Sociology	A	U/R	E
16.	An individual with contrasting alleles is called a. Homozygous b. Heterozygous c. Monoecious d. Dioecious	B	K	E
17.	The places of land ecosystem having different climate and life styles are called a. Biomes b. Bio styles c. Aphotic zones d. Bathyal zones	A	U/R	E
18.	Second meiotic division starts after a) Anaphase 1 b) Metaphase 1 c) Telophase 1 d) Diplotene	C	U	E
19.	Cells use to make protein: τ DNA τ Nucleus τ RNA τ Chromosomes	C	U/R	E
20.	Total aggregate of gene in a population is called as: * Chromosome *Gene pool *Multiple Gene * Chromonema	B	K	M
21.	Two poly nucleotide chain of DNA are apart from each other by: * 20 °A * 3.4 °A * 34 °A * 4 °A	A	U	E
22.	Group of plant tissues capable of division are termed as: * Meristem * Collenchyma * Sclerenchyma * Secondary tissues	A	U/R	E
23.	The region of axis above the cotyledon is * Hypocotyle * Epicotyle * Root * Shoot	B	K	M
24.	Dandelion plant shows following asexual reproduction: * Apomixes * Cutting * Budding * Tissue culture	A	U/R	E
25.	In grassland biomes the rainfall is usually between: * 30 to 75cm * Below 24 cm * 100-125cm * 125-150cm	A	U	E
26.	The Sea below 2000 m having no light? * Abyssal zone * Benthic zone * Euphotic zone * Neretic zone	A	U/R	E
27.	Similar group of individuals who can interbreed and produce organisms of their own kind form a: * Population * Community * Species * Succession	C	K	M
28.	The diameter of stem and root increases due to:	B	K	E

	* Intercalary meristem * Lateral meristem * Apical meristem * Superficial meristem			
29.	Individual species level approach of ecology called: τ Synecology τ Autecology τ Ecological Niche τ Succession	B	U/R	E
30.	Biological activities of organism followed by 24 hours frequency are called as? τ Long day Plant τ Circadian rhythm τ Biorhythm τ Phytoalexins	B	U/R	E
31.	Mimosa pudica shows following movement: τ Nyctinastic τ Seismonastic τ Photonastic τ Thigmotropic	B	K	M
32.	Succulent plants are commonly grouped in: τ Mesophytes τ Halophytes τ Hydrophytes τ Xerophytes	D	U/R	E
33.	If a solution having low concentration as compare to the cell solution, it is said to be: τ Hypertonic Solution τ Saturated solution τ Hypotonic Solution τ Dilute Solution	C	U	E
34.	Plants in deserts facing the scarcity of water are called a) Hydrophytes b) halophytes c)mesophytes d) xerophytes	D	U/R	E
35.	Lily is an example of Xerophytes b) mesophytes c) hydrophytes d) halophytes	C	K	M
36.	The plants growing in well watered soil A)Halophytes B)Hydrophytes C)Heterophytes D)Mesophytes E)Xerophytes	D	K	E
37.	Elongated cells with tapered ends, tough and strong but flexible, are all characteristics of: A)Secondary tissues B)Parenchyma C)Collenchyma D)SclerenchymaE)Fibers	E	U/R	E
38.	Tissues, which are formed by the activity of vascular cambium and cork cambium are called. A)Simple tissuesB)Compound tissuesC)Primary tissues D)Secondary tissuesE)Tertiary tissues	D	U	E
39.	Simple living tissue, elongated, irregularly thickened walls is: A)ParenchymaB)CollenchymaC)Sclerenchyma D)FibersE)All are incorrect	B	U/R	E
40.	Uniformly thick, heavily lignified secondary walls which give strength to the plant body are all characteristics of: A)ParenchymaB)CollenchymaC)Sclerenchyma D)FibersE)All are incorrect	C	K	M
41.	When movement occurs due to faster growth on the upper side of the organ is known as: A)NutationB)EpinasticC)Hyponastic D)ParanasticE)Paratonic	B	K	E

<b>42.</b>	When movement occurs due to faster growth on lower surface of the growing organ, it is known as: A) Nutation B) Epinastic C) Hyponastic D) Paranastic E) Paratonic	<b>C</b>	<b>U/R</b>	<b>E</b>
<b>43.</b>	Response of plants to relative length of day and night Photoperiodism b) biological clock c) biorhythm d) circadian rhythm.	<b>A</b>	<b>U</b>	<b>E</b>
<b>44.</b>	Living organisms when repeat their biological activities at regular intervals Biological clock b) biorhythms c) photoperiodism d) tropisms.	<b>B</b>	<b>U/R</b>	<b>E</b>
<b>45.</b>	Morphologically and physiologically similar gametes fuse to form zygote Oogamy b) anisogamy c) isogamy d) heterogamy	<b>C</b>	<b>K</b>	<b>M</b>
<b>46.</b>	Asexual reproduction in plants, which produce seeds without that flowers being fertilized is called: A) Sporulation B) Vegetative Propagation C) Apomixis D) Moulting E) Parthenogenesis	<b>C</b>	<b>K</b>	<b>E</b>
<b>47.</b>	A group of genetically identical offspring produced by asexual method called: A) Spore B) Clone C) Trait D) Crop E) Bud	<b>B</b>	<b>U/R</b>	<b>E</b>
<b>48.</b>	Pollination occurs when pollen grains are released from anthers and land on Stigmas b) fruits c) seeds d) roots	<b>A</b>	<b>U</b>	<b>E</b>
<b>49.</b>	The union of two sperm cells with different cells of the embryo sac is Monofertilization b) double fertilization c) cross pollination d) self pollination.	<b>B</b>	<b>U/R</b>	<b>E</b>
<b>50.</b>	Germination present in Castor oil seed: A) Epigeal B) Hypogeal C) Oviparous D) Viviparous E) Ovo-viviparous	<b>A</b>	<b>K</b>	<b>M</b>
<b>51.</b>	Maize-grain is an example of: A) Parthenocarpic fruits B) Epigeal Germination C) Hypogeal Germination D) Viviparous Germination E) Oviparous Germination	<b>B</b>	<b>K</b>	<b>E</b>
<b>52.</b>	Germination found in "Coconut", "Palms" is: A) Epigeal B) Hypogeal C) Oviparous D) Viviparous E) Ovo-viviparous	<b>D</b>	<b>U/R</b>	<b>E</b>
<b>53.</b>	The most abundant chromosomal proteins are Histones b) myosin c) tubulin d) keratin	<b>A</b>	<b>U</b>	<b>E</b>
<b>54.</b>	A division without the formation of spindle is Necrosis b) apoptosis c) meiosis d) amitosis	<b>D</b>	<b>U/R</b>	<b>E</b>

55.	In the amitotic cell division, when the nuclear portions divide more than two in number, the phenomenon is referred to as: A) Karyokinesis B) Karyotyping C) Nuclear Budding D) Nuclear Fragmentation E) Nuclear Localization	D	K	M
56.	In the amitotic cell division, when the nuclear portions are unequal in size, the process is generally called: A) Karyokinesis B) Karyolysis C) Nuclear Budding D) Nuclear Localization E) Nuclear Fragmentation	C	K	E
57.	Correct sequence of stages of mitosis: A) Prophase → Anaphase → Metaphase → Telophase B) Prophase → Metaphase → Anaphase → Telophase C) Metaphase → Anaphase → Prophase → Telophase D) Telophase → Prophase → Anaphase → Metaphase E) Anaphase → Prophase → Telophase → Metaphase	B	U/R	E
58.	Chromosomes arrange themselves at the equatorial plane of the spindle during: A) Interphase B) Prophase C) Metaphase D) Anaphase E) Telophase	C	U	E
59.	In plant cells, the mitosis is: A) Amphi-astral B) An-astral C) Uni-astral D) Pro-astral E) Poly-astral	B	U/R	E
60.	Synapsis takes place in sub-stage: A) Leptotene B) Zygotene C) Pachytene D) Diplotene E) Diakinesis	B	K	M
61.	Chiasmata formation crossing over takes place in substage: A) Leptotene B) Zygotene C) Pachytene D) Diplotene E) Diakinesis	D	K	E
62.	The cross between two individuals differing in two traits is called a) monohybrid cross b) dihybrid cross c) trihybrid cross d) quaternary hybrid cross	B	U/R	E
63.	The maximum temperature in tundra does not exceed: A) 10°C B) 20°C C) 25°C D) 30°C E) 35°C	C	U	E
64.	Deserts occupy about of land surface of the earth. A) 5% B) 8% C) 10% D) 12% E) 17%	E	U/R	E
65.	In tropical rain forest, rainfall is heavy and annual average temperature is about: A) 18°C B) 20°C C) 28°C D) 35°C E) 40°C	C	K	M
66.	The term “savannah” is applied to: A) Temperate deciduous forest B) Coniferous forest C) Tropical grass lands D) Tropical rain forest E) Desert Ecosystem	C	K	E
67.	The two sets of chromosomes reach the opposite pole of the cell in: A) Leptotene B) Diplotene C) Metaphase I D) Anaphase I E) Diakinesis	D	U/R	E



