Roll No: | | | | | | | Answer Sheet No: _____

Signature of Candidate: _____ Signature of Invigilator: _____

Federal Board HSSC-II Examination
Biology Model Question Paper
(Curriculum 2000 – PTB)

SECTION – A

Time allowed: 25 minutes Marks: 17

Note: Section-A is compulsory and comprises pages 1-3. All parts of this section are to be answered on the question paper itself. It should be completed in the first 25 minutes and handed over to the Centre Superintendent. Deleting/overwriting is not allowed. Do not use lead pencil.

Q.1 Encircle the correction option i.e. A / B / C / D. Each part carries one mark.

i. The maximum speed of Nerve impulse as recorded in humans is:
A. 100 meters/second B. 110 meters/second
C. 120 meters/second D. 130 meters/second

ii. The animals that lay shelled eggs to protect the developing embryo from harsh terrestrial conditions are called
A. Viviparous B. Ovoviviparous
C. Oviparous D. Metatherians

iii. Most proteins start with an amino acid methionine encoded by an initiation codon:
A. UAA B. UGA
C. AUG D. UAG

iv. In a population with two alleles **A** and **a** for a particular locus, the allelic frequency of A is 0.6. What would be the frequency of heterozygote if the population is in Hardy – Weinberg equilibrium?
A. 0.36 B. 0.16
C. 0.24 D. 0.48

v. The term niche was first proposed in 1917 by Joseph Grinnell an American:
A. Embryologist B. Ornithologist
C. Ecologist D. Physiologist

vi. During which phase of meiosis the non-sister chromatids of homologous chromosome exchange their segments in the formation of chiasmata?
A. Pachytene B. Leptotene
C. Diplotene D. Diakinesis

vii. Which of the following is **NOT** a sex-linked disease in humans?
A. Hypophosphatemia B. Colour-blindness
C. Sickle cell anemia D. Haemophilia

DO NOT WRITE ANYTHING HERE

viii. When a haemophiliac carrier woman marries a normal man, who among her offspring may be affected?

A. All her children
B. All her daughters
C. Half of her daughters
D. Half of her sons

ix. In an ecosystem, the second trophic level is constituted by the:

A. Producers
B. Decomposers
C. Primary consumers
D. Secondary consumers

x. The enzyme luciferase is produced by an insect commonly called:

A. Housefly
B. Butterfly
C. Firefly
D. Dragonfly

xi. Both the parents have blood group AB. What is the probability of the children having blood group O?

A. 25%
B. 50%
C. 75%
D. Zero %

xii. In the human liver, ammonia and citrulline chemically combine together to form:

A. Ornithine
B. Creatinine
C. Creatine
D. Arginosuccinate

xiii. Which of the following is a degenerative disease?

A. Alzheimer
B. Arteriosclerosis
C. Cretinism
D. Kwashiorkor

xiv. Which phenomenon reduces the chances of genetic recombination and variations among offspring?

A. Linkage
B. Crossing over
C. Independent Assortment
D. Dominance

xv. Photonasty and thermonasty are the type of:

A. Haptonasty
B. Hyponasty
C. Nyctinasty
D. Epinasty

xvi. pSC 101 plasmid has antibiotic resistance gene for:

A. Tetracycline
B. Ampicillin
C. Streptomycine
D. Penicillin

xvii. In limnetic zone, phytoplankton includes:

A. Algae
B. Bacteria
C. Mosses
D. Cyanobacteria

For Examiner's use only

Q. No.1: Total Marks:	17
Marks Obtained:	

Federal Board HSSC-II Examination
Biology Model Question Paper
(Curriculum 2000 – PTB)

Time allowed: 2.35 hours Total Marks: 68

Note: Sections 'B' 'C' and 'D' comprise pages 1-2 and questions therein are to be answered on the separately provided answer book. Answer any SEVEN parts each from section 'B', and section 'C' and any two questions from section 'D'. Use supplementary answer sheet i.e., sheet B if required. Write your answers neatly and legibly.

SECTION – B (7× 3 = 21)

(Chapter 15 – 20)

Please write your answer in no more than Five/SIX lines.

Q.2 Attempt any SEVEN parts from the following. Each question carries equal marks.

i. How does vernalization stimulate plants?

ii. What is the main role of following hormones?

a.	TSH	b.	ADH	c.	Calcitonin
d.	Glucagon	e.	Estrogen	f.	Androgens

iii. How many types of joints are present in human skeleton?

iv. What are three types of RNA?

v. What is a receptor? Enlist any TWO categories of receptors and their respective role.

vi. Name cranial and facial bones of skull.

vii. Differentiate between asexual reproduction and sexual reproduction.

viii. Draw a labeled diagram of a nephron of human kidney?

ix. How does formation of nervous system takes place in chick embryo?

x. Compare Active and Passive flight in birds.

SECTION – C (7×3 = 21)

(Chapter 21 – 27)

Q.3 Attempt any SEVEN parts from the following. Each question carries equal marks.

i. Write the role of restriction endonucleases.

ii. Write first three stages of Xerosere succession.

iii. Explain with the help of an example "incomplete dominance".

iv. State Hardy-Weinberg Theorem with equation.

v. Describe any three stages of prophase-I of meiosis.

vi. How does the light affect aquatic life?

vii. What is a transgenic organism? Show diagrammatically the procedure to produce a transgenic animal.

viii. How is sex determined in birds?

ix. What do you know about Down's syndrome?

x. What are main sources of water pollution?

SECTION – D (Marks 26)

Note: Attempt any **TWO** questions. All questions carry equal marks. (2×13 = 26)

Q.4	a.	Describe various parts of human brain.	(07)
	b.	How does thermoregulation occur in humans?	(06)
Q.5	a.	Explain and Show ultra- structure of a human skeletal muscle.	(07)
	b.	Explain female reproductive cycle.	(06)
Q.6	a.	Explain the process of DNA replication.	(07)
	b.	Write about the causes of different types of Hemophilia. How is it transferred from one generation to the next?	(06)