**Pakistan School, Ministry of Education, Kingdom of Bahrain**

**Pre Board Exams, June, 2021**

**Class: HSSC-II Total Marks: 17**

**Subject: Biology Time Allowed: 25 Min.**

**Student’s Name : --------------------------------------------------------**

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| **Note: Section-A is compulsory.Deleting/overwriting is not allowed.Do not use lead pencil.** |

**SECTION-A (Marks 17)**

**Q.NO. 1: Circle the correct option i.e A/B/C/D. Each part carries one mark.**

i) The type of urinary tract infection in which urinary bladder is particularly infected

 A. Encephalitis B. Urethritis C. Cystitis D. Urethritis

ii) Which of the following changes will increase the body’s rate of carbon dioxide excretion into the alveoli?

 A. Holding of breathe

 B. The break down of alveolar tissues as a result of disease

 C. A decrease in the partial pressure of carbon dioxide in the alveolar air

 D. A decrease on the pulmonary circulation

iii) Which of the following items gives the incorrect total number?

1. Ribs in human--- 24 B. Metacarpals in human-- 10

C. Cervicle vertebrae in Human-- 7 D. Facial Bone ---29

iv) Water content in human blood is regulated by ADH. In which part of the nephron does regulation occur?

 A. Ascending limb of loop of Henle B. Descending limb of loop of Henle

 C. Bowman’s capsule D. Proximal convoluted tubule

v) Spermatozoa are stored prior to emission and ejaculation in

 A. Epididymis B. Seminal vesicle

 C. Urethra D. Prostate gland

vi) Repolarised nerve fibre cannot conduct nerve impulse immediately because

1. It has different polarity than that of Polarised fiber
2. It has been hyperpolarised
3. Na+ – K + Pumps don’t work correctly

 D. Ionic distribution is not as that of polarized neuron

vii) Diabetes incipidus is caused by

1. Undersecretion of ADH
2. Oversecretion of ADH
3. Undersecretion of Insulin
4. Oversecretion of Insulin

viii) Which of the following is the first residence of human embryo?

1. Perimetrium B. Endometrium C. Schizometrium D. Myometrium

ix) Synthesis of a new DNA strand usually begins with

 A. An RNA primer B. DNA ligase

 C. A DNA primer D. An Okazaki fragment

x) Taq Polymerase is used in PCR becuase of its

 A. Low thermal stability B. High thermal stability

 C. High fidelity D. High speed

xi) Which one is the composition of thick myofilament

 A. Actin, myosin and tropomyosin B. Actin, troponin and tropomyosin

 C. Actin, myosin and troponin D. Tubulin and RNA

Xii) Which one is the member of foliose lichen?

 A. *Licanora* B. *Anabena*

 C. *Dermatocarpom* D. *Rhinodina*

xiii) In human development ectoderm cells migrate through the primitive streak to form

 A. Ectoderm B. Mesoderm

 C. the chorion D. The yolk sac

xiv) If you want to label amino acids but not the DNA, which of the following radioactive isotopes would you use?

 A. 18 F B. 36 S C. 14 C D. 32 P

xv) Which of the following is a vector in biotechnology?

 A. RFLPs B. CFTRs

 C. YACs D. CDNAs

xvi) Which of the following sequences in double stranded DNA is most likely to be recognized as a cutting site for a restriction enzyme?

 A. AAGG B. AGTC C. GGCC D. ACCA

 TTCC TCAG CCGG TGGT

xvii) Gel electrophoresis separates nucleic acid on the basis of difference in

 A. Length ( Molecular weight ) B. Charge

 C. Nucleotide sequence D. Relative proportion of adenine and guanine

** Pakistan School, Ministry of Education, Kingdom of Bahrain**

**Pre Board Exams, , June, 2021**

**Class: HSSC-II Total Marks: 68**

**Subject: Biology Time Allowed: 2:35 hrs.**

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| **Note: Answer any SEVEN parts from section ‘B’ and ‘C’ and any TWO Questions from section “D”**  |

**Section-B (Chapter 14 -18,20)**

 **Q.NO.2** **Attempt any SEVEN parts. All parts carry equal marks.**  **(7x 3 = 21)**

1. Describe the structure and function of human larynx.
2. Name the bones that make the pelvic girdle and pectoral girdle.
3. How does counter current multiplier mechanism control the urine concentration?
4. Describe the function of Z line and M line.
5. What is limbic system?
6. Compare the depolarization and re polarization of nerve fibre.
7. Differentiate between sertoli cell and leydig cell.
8. How is the secretion of ADH controlled?
9. What are the actions of GnRH, FSH and LH in human reproductive system?
10. Enlist the reasons of human male infertility.

**SECTION-C. (Ch.21-23,25-26)**

 **Q. 3. Attempt any SEVEN of the following questions. All questions carry equal marks. (7x3=21)**

1. What is sex influenced trait? Give example.
2. Describe the four characterstics of genetic code.
3. Differentiate between transgenic organisms and hybrid organisms.
4. What is post transcriptional modification of mRNA?
5. Write a note on phenylketonuria?
6. Differentiate between Ammonification and Nitrification?
7. What is the role of DNA ligases in gene technology?
8. How are the fragments in gel electrophoresis visualized?
9. Define gene Therapy. What is the difference between ex vivo and in vivo gene therapy?
10. Draw a labelled figure to show different parts of placenta.

 **SECTION-D**

**Note: Attempt any TWO of the following questions. All questions carry equal marks. (13x2=26)**

 **Q.4.** a. Describe the structure and function of human kidney. (6)

 b. Describe various phases of translation in central dogma. (7)

 **Q.5. a**. Explain how the Na+/K+ pump contributes to the resting membrane potential? (7)

 **b**. Define and explain gastrulation in Humans . (3)

 **c.** If a cross is made between a chocolate coloured *Lebrador* and a black one, what is the probability of having a yellow puppy. Draw punnet square to support your answer (3)

**Q.6.** a Describe the procdure, observations and conclusion of Meselson and Stahl’s Experiment (6)

 b. Describe various stages of Ecological succession. (7)