KENDRIYA VIDYALAYA SANGATHAN LUCKNOW REGION

CLASS XII BIOLOGY

PREBOARD I (MS) **- 2024-25**

Section A		
Q No.	**Question**	**Marks**
1.	(c) They are both reproductive and endocrine in function	1
2.	(a) 1 & 4	1
3.	(d) Uracil	1
4.	A. Provides a binding site for RNA polymerase	1
5.	(1) β Thalassemia – Chromosome 11	1
6.	c. Base Pairs	1
7.	B. Affected female	1
8.	d. 5- methyl uracil	1
9.	c. Palm	1
10.	(c) 0.166	1
11.	(d) Micro-injection	1
12.	a. Aeration tanks	1
13.	D	1
14.	D	1
15.	A	1
16.	B	1
SECTION B		
17.	B-lymphocytes: produce antibodies T-lymphocytes: helps B cells to produce antibodies	1+1

18.	**A.** C Gets differentiated in to three germ layers: Ectoderm, endoderm and mesoderm. It forms the embryo. D gets attached to the endometrium. After implantation, finger-like projections appear on the trophoblast called chorionic villi. Contributes to placenta formation. B - First trimester. Reason: Organ formation occurs during first trimester. Heart forms during first month, limbs and digits in second month. By third month major organ systems are formed.	1(1/4 x4) + ½ x 2 1x2
19.	**A** Description of bead on string structure with help of Histone octamer and H1 histone. B Same codon for multiple amino acids. Advantage 1: Reduce negative impact of single nucleotide mutations Advantage 2: one tRNA can pair with multiple codons.	2 1+1
20.	(a) Production of biological products: human protein (a-1-antitrypsin) used to treat emphysema (or any other example (b) Chemical safety testing: Toxicity testing (brief description)	2
21.	a. Autosomal dominant b. 6 & 7 – Aa. 8 - aa	½ +1 ½
SECTION C		
22.	a. A - antipodals. B- Polar Nuclei, C- Central cell, D – egg cell b. A – Mark chalazal end, B- Form secondary nucleus and later primary endosperm nucleus, C- Forms endosperm; D- Forms zygote	¼ x 4 + ½ x 4
23.	(a) 1:2:1 (Norma; : Cariier: Thalassemic) (b) No. In heterozygous condition, the allele is not expressed.	2+1
24.	Coding Strand: ATGCATGCATGC Template strand: TACGTACGTACG Dna DEPENDENT rna PLYMERASE	1++1
25.	a. Morphinne b. Poppy (*Papaver somniferum)* c. Heroin (smack)	½ + ½ +1 +1

	d. binds to specific opioid receptors present in our central nervous system and gastrointestinal tract. Depressant.	
26.	Name the ancestors of man based on the features given below: (i) *Homo erectus* (ii) Neanderthal man. (iii) *homo habilis*.	1x3
27.	Zygote Intra-fallopian transfer, Inta-uterine transfer ZIFT: Transfer in Fallopian tube at 8 blastomere stage IUT: More than 8 cell stage transferred in to uterus	1+2
28.	Scientists have succeeded in recovering healthy sugarcane plants from a diseased one. (i) Root tip or shoot tip (ii) Describe tissue culture or micropropagation (iii) Somaclone (iv) Totipotency	1+1 +1/2 + ½
SECTION D		
29.	(a) Dung + Water; methane + CO_2 + H_2 (b) Methanogens, Anaerobic Condition (c) IARI and KVIC (full names) (d) Ruminants / rumen of cattle	1x4
30.	Ecological relationships between organisms play an important role in the biodiversity of the region. In some cases, they benefit the diversity while in others cause a subsequent reduction in it. (a) True. Predator keeps prey population under control. (b) Extinction of barnacle and sticky crustaceans would not affect whales. Extinction of whale would negatively affect other two. (c) Predation, parasitism or Mutualism (obligatory associations) (d) Coextinction	1+1 + 1+½ +1/2

SECTION E		
31.	(a) progestogen–estrogen combinations (b) Once a week. Less side effects, High contaceltive value, reversible (Any 2).Yes. (c) Non-medicated, Copper releasing, Hormone releasing IUDs (brief description/ with examples). **OR** (a) schematic representation. (b) Any two differences	1+2+2 3+2
32.	a) description of method of selection using any antibiotic gene. Selectable marker b) Correct method – description or flow chart **OR** PCR – diagram based description	3+2 5
33.	a. Explain the following giving suitable examples: (i) Over exploitation – description with e.g (Steller's sea cow, passenger pigeon) (ii) Alien species invasion - description with e.g (carrot grass (*Parthenium*), *Lantana* and water hyacinth (*Eicchornia*). (i) Co extinction - description with e.g (plant pollinator or any other example) b. Pyramid in Sea. biomass of fishes far exceeds that of phytoplankton. c. energy flows from a particular trophic level to the next trophic level, some energy is always lost as heat at each step. **OR** Comparison with description, graph and equation. Exponential - Continuous cultures of bacteria. Logistic – animal population (or any other example)	3+1+1 5