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SECOND YEAR HIGHER SECONDARY EXAMINATION, MARCH 2024

SY-526 ZOOLOGY UNOFFICAL ANSWER KEY

I Answer any 3 questions from 1 to 5.Each carries 1 score

Qn No.	Scoring Key	Score
1	Alleles	1
2	Transcription	1
3	Saheli	1
4	Foreskin	1
5	Edward Wilson	1

II Answer any 9 questions from 6 to 16.Each carries 2 score

6

Homologous Organs	Analogous Organs
The organs which have the anatomically same structure but are different in functions are called homologous organs	The organs which have similar functions but are different in anatomical structures are called analogous organs
These organs developed due to divergent evolution	Analogous structures are a result of convergent evolution
Eg: 1)Fore limbs of whales, bats, Cheetah and human 2) Vertebrate hearts or brains. 3)The thorn and tendrils of Bougainvillea and Cucurbita **(Any one example from each)**	Eg: 1)Wings of butterfly and of birds 2)The eye of the octopus and of mammals 3)The flippers of Penguins and Dolphins 4)Sweet potato (root modification) and potato (stem modification)

2

7

A) Vas deferens ½
B)Urethra ½
C)Epididymis ½
D)Rete testis ½

8

a) Gonorrhoea, syphilis, Genital herpes, Chlamydiasis, Genital warts, Trichomoniasis, Hepatitis-B,HIV **(Any two STIs)** 1

b)
(i) Avoid sex with unknown partners/multiple partners.
(ii) Always try to use condoms during coitus.
(iii) In case of doubt, one should go to a qualified doctor for early detection and get complete treatment if diagnosed with infection. 1
(Any two methods to prevent STIs)

9

A) Down's Syndrome ½

	B) Klinefelter's Syndrome C)44A+XXY /47,XXY D) Such females are sterile as ovaries are rudimentary / Lack of other secondary sexual characters **(Any One symptom)**	½ ½ ½
10	**(i) Physical barriers :** Skin on our body /Mucus coating of the epithelium lining the respiratory, gastrointestinal and urogenital tracts also help in trapping microbes entering our body. **(Any one example)** **(ii) Physiological barriers :** Acid in the stomach/saliva in the mouth/tears from eyes **(Any one example)** **(iii) Cellular barriers :** Certain types of leukocytes (WBC) of our body like polymorpho-nuclear leukocytes (PMNL-neutrophils) / monocytes / natural killer (type of lymphocytes) in the blood /macrophages in tissues can phagocytose and destroy microbes. **(Any one example)** **(iv) Cytokine barriers :** Virus-infected cells secrete proteins called interferons which protect non-infected cells from further viral infection **(Any one example)**	**2**
11	A) Ramapithecus B) *Homo habilis* C) *Homo erectus* D) *Homo sapiens*	½ ½ ½ ½
12	a)Male=Vasectomy Female=Tubectomy b) CuT, Cu7, Multiload 375 **(Any two examples)**	½ ½ ½+ ½
13	a)Incomplete dominance b)Genotypic ratio = 1:2:1 Phenotypc ratio = 1:2:1 c) Dog flower (snapdragon or Antirrhinum sp.)/ *Mirabilis jalapa* (4 O'clock plant) **(Any one plant)**	½ ½ ½ ½
14	A)Transcription B)Translation	**1** **1**
15	*Clostridium butylicum*---Butyric acid *Aspergillus niger*—Citric acid *Acetobacter aceti*—Acetic acid Lactobacillus—Lactic acid	½ ½ ½ ½
16	a)No	½

	b)ELISA/Enzyme Linked Immuno-sorbent Assay c) • A progressive decrease in the number of helper T-lymphocytes in the body of the infected person. • The person suffers from bouts of fever, diarrhoea and weight loss. • Due to decrease in the number of helper T lymphocytes, the person starts suffering from infections that could have been otherwise overcome such as those due to bacteria especially Mycobacterium, viruses, fungi and even parasites like Toxoplasma. • The patient becomes so immuno-deficient that he/she is unable to protect himself/herself against these infections (Any two relevant answer)	½ ½ ½
	III Answer any 3 questions from 17 to 20.Each carries 3 score	
17	a)A-Estrogen B-Progesterone b)C-Corpus Luetum,It secrete progesterone which is essential for maintenance of the endometrium c)LH/Luteinising Hormone	1 1.5 ½
18	(i) Isolation of DNA, (ii) Digestion of DNA by restriction endonucleases, (iii) Separation of DNA fragments by electrophoresis, (iv) Transferring (blotting) of separated DNA fragments to synthetic membranes, such as nitrocellulose or nylon, (v) Hybridisation using labelled VNTR probe, and (vi) Detection of hybridised DNA fragments by autoradiography	½ ½ ½ ½ ½ ½
19	a) i)Habitat loss and fragmentation ii) overexploitation iii)alien species invasion iv)co-extinction b) in situ (on site) conservation and ex situ (off site) conservation c) a) Speciation is generally a function of time, unlike temperate regions subjected to frequent glaciations in the past, tropical latitudes have remained relatively undisturbed for millions of years and thus, had a long evolutionary time for species diversification, b) Tropical environments, unlike temperate ones, are less seasonal, relatively more constant and predictable. Such constant environments promote niche specialisation and lead to a greater species diversity	 1 ½ + ½ ½ ½

	c) There is more solar energy available in the tropics, whichcontributes to higher productivity **(Any two points)**	
20	a)A-Autosomal dominant B-Austosomal recessive b)  mating between relatives (consanguineous mating) c) Analysis of traits in a several of generations of a family is called the pedigree analysis	½ ½ 1 1