

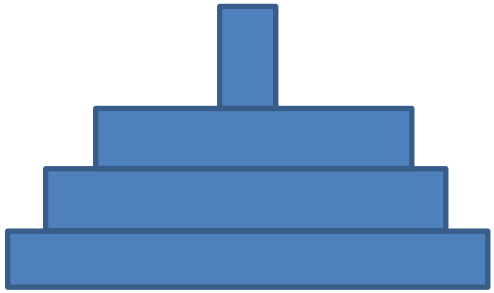
**GOVERNMENT OF KARNATAKA
KARNATAKA STATE PRE-UNIVERSITY EXAMINATION BOARD
II PUC SUPPLEMENTARY EXAMINATION-JULY 2018
SCHEME OF EVALUATION**

Subject Code: 36(NS)

Subject: BIOLOGY

<u>Q.No.</u>		<u>Marks</u>	<u>P.No in TB</u>
	<u>PART -A</u>		
1	The first menstruation begins at puberty.	1	49
2	Pneumonia.	1	147
3	It helps in identifying and eliminating non trans formants and selectively permitting the growth of the transformants.	1	199
4	Coelacanth.	1	138
5	Relaxin.	1	53
6	The Meristem is free of virus. So, in tissue culture if the plant is infected with a virus, by removing meristem one can grow virus free plants.	1	177
7	IgA.	1	152
8	To minimise heat loss from the body.	1	226
9	Dobson units (DU).	1	282
10	Blood – Cholesterol lowering agent.	1	183

<u>Q.No.</u>		<u>Marks</u>	<u>P.No in TB</u>
	<u>PART -B</u>		
11	Cyclic Changes during reproduction in primates is menstrual cycle. A cyclic change in nonprimates is oestrus cycle.	1 1	9
12	It is a kind of back cross where F ₁ plant is crossed with its recessive parent. It helps in finding F ₁ Plant is homozygous or heterozygous.	1 1	74
13	These are organs which are different in structure and origin but perform similar functions. Ex: Eyes of octopus and mammals Flippers of Penguins and Dolphins Sweet Potato and Potato (Any One example)	1 1	131
14	Objectives Of improving. a) Protein content and quality b) Oil content and quality c) Vitamin content d) Micronutrient and mineral content (Any two)	2	176
15	Diagram of an antibody molecule with four labellings. (½ marks each)	2	151
16	The Palindrome in DNA is a sequence of base pairs that read the same on the two stands in 5 ¹ → 3 ¹ direction and in 3 ¹ → 5 ¹ direction. Restriction site 5 ¹ — GAATTC — 3 ¹ 3 ¹ — CTTAAG — 5 ¹	1 1	196
17	Steller's sea cow. Passenger pigeon.	1 1	265
18	Sacred grooves are large tracts of forests where trees and wildlife within are conserved due to cultural and religious beliefs. Ex: a) Khasi and Jaintia Hills in Meghalaya b) Aravalli hills of Rajasthan c) Western Ghat Regions of Karnataka & Maharashtra d) Sarguja , Chanda&Bastar areas (MadyaPradesh) (Any one example)	1 1	267

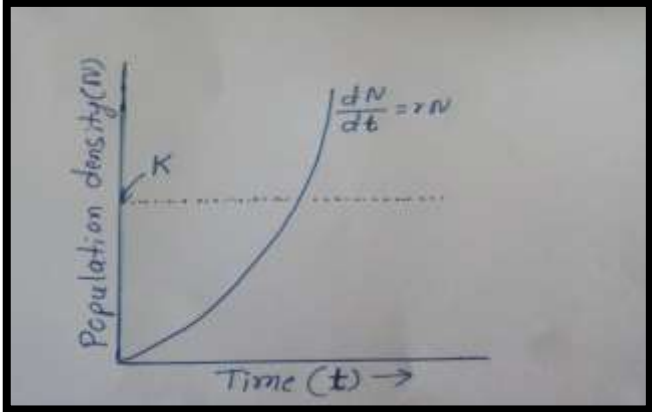
<u>Q.No.</u>		<u>Marks</u>	<u>P.No in T B</u>
	<u>PART -C</u>		
19	The production of offsprings by a single parent without formation and fusion of gametes. Pencilium – Conidia Sponge - Gemmule	1 1 1	06
20	A typical anatropous ovule with six labellings. (½ marks each)	3	25
21	It is a sex linked recessive disorder due to defect in either red or green cone of eye resulting in failure to discriminate between red and green colour. This defect is due to mutation in certain genes present in the X chromosome. It occurs in about 8% of males and only about 0.4% of females	3	89
22	The evolution of closely related species in a given Geographical area starting from a point. Ex: a) Darwin's finches b) Australian marsupials c) Placental mammals in Australia (Any two examples)	1 2	133
23	The representation of a food chain in the form of a pyramid. <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>TC</p> <p>SC</p> <p>PC</p> <p>PP</p> </div> <div style="text-align: center;">  </div> <div style="text-align: center;"> <p>10J</p> <p>100J</p> <p>1000J</p> <p>10000J</p> </div> </div> <p style="text-align: center;">1,000,000J of sunlight an ideal pyramid of energy</p>	1 2	249
24	A thin piece of the suspected tissue is stained and examined under microscope. <ul style="list-style-type: none"> • Radiography • C T Scan • MRI • Use of antibodies • Techniques of molecular biology (Any two)	1 2	157
25	a) It is used to synthesise multiple copies of the gene of interest. b) It is used to stain separated DNA fragments. c) It is used to produce large quantity of products where large volumes of culture can be processed.	1 1 1	203 198 204

26	<p>Primary succession on rocks</p> <p>Lichens (Pioneer species they secrete acids to dissolve rock , helping in weathering and soil formation) →</p> <p>Small Plants like bryophytes (they need only small amount of soil) → bigger plants → stable climax forest community. (mesophytic)</p> <p>The climax community remains stable as long as the environment remains unchanged.</p>	3	251
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<u>Q.No.</u>	<u>PART -D</u>	<u>Marks</u>	<u>P.No in TB</u>
	Section -1		
27	<p>a) The fruits develop from the ovary and thalamus. Ex: apple, strawberry, cashew. (Any one)</p> <p>b) Characteristics</p> <p>I. The flowers are large, conspicuous, coloured and showy.</p> <p>II. When flowers are small, they aggregate in the form of an inflorescence.</p> <p>III. The flowers have a fragrance and sweet nectar.</p> <p>IV. Pollengrains are rough and surrounded by sticky substance called pollenkitt.</p> <p>V. Flowers are very good places for the insects to lay their eggs. Ex: Yucca, Ficus. (Any three)</p>	<p>1</p> <p>1</p> <p>3</p>	36
28	Diagram of human male reproductive system with ten correct labellings. ½X10	5	43
29	<p>a) (i) IVF-ET –Invitro fertilisation –embryo transfer. The fertilisation outside the body of the mother in simulated condition. The transfer of embryo to the fallopian tube or uterus of surrogate mother.</p> <p>(ii) ZIFT –Zygote intra fallopian transfer. Zygotes with 8 blastomeres are transferred into the fallopian tube.</p> <p>(iii) ICSI - Intra cytoplasmic sperm injection. Sperm is directly injected into the ovum in laboratory.</p> <p>b) Progesterone, LNG -20.</p>	<p>1</p> <p>1</p> <p>1</p> <p>2</p>	<p>64</p> <p>60</p>

30	<p>The law states that when two pairs of traits are combined in a hybrid, segregation of one pair of characters is independent of the other pair of characters.</p> <p>Mendel worked with pea plants by considering two characters, shape and colour of the seed</p> <p>In the dihybrid cross the phenotypes round yellow, wrinkled yellow, round green and wrinkled green appeared in the ratio 9:3:3:1</p> <p>The Punnett square can be used to understand the independent segregation of the two pairs of genes during meiosis and the production of eggs and pollen in the F₁ RrYy plant</p> <p>Consider the segregation of one pair of genes R and r, 50percent of the gametes have the gene R and the other 50 percent have r. The segregation of 50percent R and 50 Percent r is independent from the segregation of 50 percent Y and 50 percent y. Therefore 50 percent of the r bearing gametes has Y and the other 50 percent has y. Thus there are four genotypes of gametes. The four types are RY, Ry, rY and ry each with a frequency of 25 percent. (Only punett square-2marks)</p>	1 1 3	75 80
31	<p>(i) Collection of variability: The entire collection of plants or seeds having all the diverse alleles for all genes in a given crop is called germplasm collection.</p> <p>(ii) Evaluation and selection of parents: The germplasm is evaluated so as to identify plants with desirable combination of characters to be used as parents.</p> <p>(iii) Cross hybridization among the selected parents: This is possible by cross hybridising the two parents to produce hybrids that genetically combine the desired characters in one plant.</p> <p>(iv) Selection and testing of superior recombinants: This step consists of selecting, among the progeny of the hybrids, those plants that have the desired character combination.</p> <p>(v) Testing, release and commercialisation of new cultivars: The newly selected lines are evaluated in research fields is followed by testing the materials in farmers' fields for at least three growing seasons at several locations in the country.</p>	5	171
32	<p>a) H bond Glycosidic bond Phospho diester bond</p> <p>b) Euchromatin : Loosely packed and transcriptionally active chromatin and stains light. Heterochromatin: Densely Packed and inactive region of Chromatin and stains dark.</p>	3 2	96 100

Section -2			
33	<p>The DNA fragments that shows very high degree of polymorphism.</p> <p>Steps.</p> <p>(i) Isolation of DNA</p> <p>(ii) Digestion of DNA by restriction endonucleases</p> <p>(iii) Separation of DNA fragments by electrophoresis</p> <p>(iv) Transferring of separated DNA fragments to synthetic membrane, such as nitrocellulose or nylon.</p> <p>(v) Hybridisation using labelled VNTR probe</p> <p>(vi) Detection of hybridised DNA fragments by autoradiography.</p> <p>(Any four)</p>	1 4	122
34	<p>a) A neat labelled diagram of typical biogas plant.</p> <p style="text-align: center;">Diagram -1 Labelling - ½ X4</p> <p>b) Anaerobic bacterias digest the bacteria and the fungi in the sludge. During this digestion bacteria produce a mixture of gases such as methane, hydrogen sulphide and carbon dioxide. These gases form biogas and can be used as source of energy.</p>	1 2 2	186 184
35	<p>Benefits of transgenic animals</p> <p>(i) Normal physiology and development. Transgenic animals are used to study how genes are regulated and how they affect the normal body functions and its development.</p> <p>(ii) Study of disease. Transgenic animals help for investigation of new treatments for human diseases. Ex: Transgenic models for many human diseases such as cancer, cystic fibrosis, rheumatoid arthritis and Alzheimer's.</p> <p>(iii) Biological products. Some medicines contain biological products but they are often expensive. Transgenic animals are used to produce useful biological products by introducing genes which codes for a particular product. Ex: Human protein used to treat emphysema products for treatment of Phenylketonuria and cystic fibrosis.</p> <p>(iv) Vaccine safety testing. Transgenic mice are used to test the safety of vaccines before they are used on humans. Transgenic mice are used to test the safety of the polio vaccine.</p> <p>(v) Chemical safety testing. Transgenic animals are made that carry genes which make them more sensitive to toxic substances. They are exposed to the toxic substances and the effects studied.</p>	1 1 1 1	212

36	<p>a) Natality Mortality Immigration Emigration</p> <p>b)</p>  <p>c) One petal of ophrys resembles female bee in size. So male bee pseudocopulates with the flower. It is known as sexual deceit.</p>	2	228
37	<p>a) Carbon dioxide and methane are known as green house gases .They are responsible for the greenhouse effect.</p> <p>b) Catalytic converter is fitted into automobiles for reducing emission of poisonous gases.</p> <p>c) Uv-B damages DNA and mutation may occur. It causes aging of skin, damage to skin cells, skin cancers and snow blindness.</p> <p>d) Ozone layer acts as a shield and absorbs ultraviolet radiation from the sun.</p> <p>e) It is a device used to remove particulate matter in the exhaust from a thermal power plant.</p>	2	230
		1	238
		1	281
		1	272
		1	283
		1	282
		1	271

END