

KENDRIYA VIDYALAYA SANGATHAN JAMMU REGION
PRE BOARD I EXAMINATION 2025-26
SET 1

Class XII
Subject: Biology

Max. Marks: 70
Time Allowed: 3 Hrs.

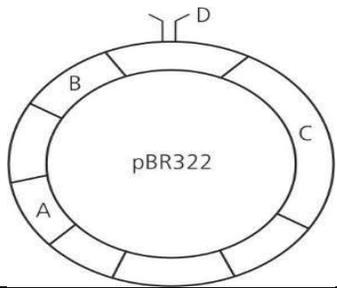
General instruction:

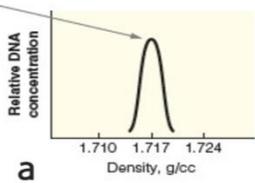
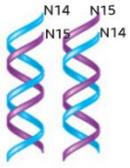
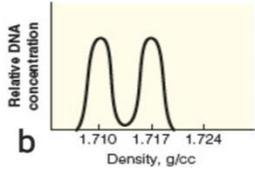
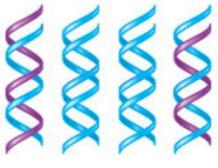
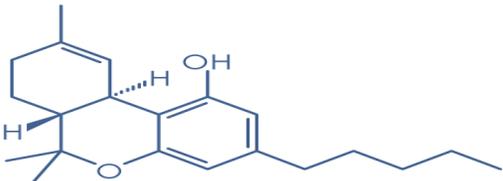
1. The question paper consists of 5 sections and 33 questions
2. Section A consists of question 1-16 carrying 1 mark each and is multiple choice questions. All are compulsory.
3. Section B consists of questions 17 -21 carrying 2 marks each and are very short answer types and one internal choice available.
4. Section C consists of question 22 to 28 carrying 3 marks each and are short answer type and one internal choice available.
5. Section D consists of questions 29 to 30 carrying 4 marks each and are case studies.
6. Section E consists of question 31 to 33 carrying 5 marks each and are long answer types. There are internal choices available.

Q. No.	Question (SECTION A)	Marks
1	Which of the following is not correct for Tapetum: (a) It provides nourishment to the pollen grains (b) It possesses multiple nucleus (c) It is the outermost layer in the anther (d) The cells have dense cytoplasm	1
2	GAATTC is the palindromic sequence recognized by: (a) EcoRI (b) HindII (c) HindIII (d) BamHI	1
3	Among the following ____ is not a reversible method of contraception. (a) Saheli (b) Lippes's loop (c) Tubectomy (d) Diaphragms	1
4	The following exhibits the exception to Mendel's first law, except: (a) Flower color of snapdragon (b) Segregation of alleles (c) ABO blood group (d) Starch grain size in pea	1
5	Find the incorrect statement:	1

	<p>(a) The mRNA is complimentary to the coding strand.</p> <p>(b) In prokaryotic the transcription unit is polycistronic</p> <p>(c) The DNA undergoes mutation at a very slow rate</p> <p>(d) Sigma factor is important for initiation process in transcription.</p>	
6	<p>The correct sequence of human evolution is:</p> <p>(a) <i>Ramapithecus</i> -> <i>Australopithecines</i> -> <i>Homo erectus</i> -> <i>Homo habilis</i></p> <p>(b) <i>Australopithecines</i>-> <i>Ramapithecus</i>-> <i>Homo erectus</i>-> <i>Homo habilis</i></p> <p>(c) <i>Ramapithecus</i> -> <i>Australopithecines</i> -> <i>Homo habilis</i>-> <i>Homo erectus</i></p> <p>(d) <i>Ramapithecus</i>-> <i>Homo erectus</i>-> <i>Homo habilis</i>-> <i>Homo sapiens</i></p>	1
7	<p>Which of the following is a positive interaction:</p> <p>(a) Mutualism (b) Competition (c) Amensalism (d) Both a and c</p>	1
8	<p>The average duration of human pregnancy is ____months and is called ____period.</p> <p>(a) 9, parturition (b) 9, gastrulation (c) 6, lactation (d) 9, gestation</p>	1
9	<p>To make the cell competent for IVF technology which method we use:</p> <p>(a) Electroporation (b) Microinjection (c) Ca²⁺ treatment (d) gene gun</p>	1
10	<p>Which of the following will add to the population density:</p> <p>(a) Natality (b) Mortality (c) Emigration (d) Both a and c</p>	1
11	<p>The baker's and brewer's yeast is:</p> <p>(a) <i>Propionibacterium</i> sp. (b) <i>Saccharomyces</i> sp.</p> <p>(c) <i>Straptomyces</i> sp. (d) <i>Lacticobacillus</i></p>	1
12	<p>Find the correct match among the following type of immune barriers:</p> <p>(a) Antibiotics: Cell mediated immunity</p> <p>(b) Saliva in mouth: physical barrier</p> <p>(c) Interferon: cytokine barrier</p> <p>(d) PMNL: physiological barrier</p>	1
	<p>Question 13-16 are assertion and reason questions.</p> <p>A. If both the assertion and reason are correct and the reason is the correct explanation of the assertion.</p>	

	<p>B. If both the assertion and reason are correct and the reason is not the correct explanation of the assertion.</p> <p>C. If assertion is correct and the reason is incorrect.</p> <p>D. If both the assertion and reason are incorrect.</p>	
13	<p>Assertion: The pyramid of energy is always upright.</p> <p>Reason: Only 10% energy gets transferred to the higher trophic level.</p>	1
14	<p>Assertion: Species richness increases with increase in explored area.</p> <p>Reason: This increase in species richness with respect to area explored is unlimited.</p>	1
15	<p>Assertion: When we cross pea plant having violet flowers with white flowers pea plant we obtained white flower pea plants</p> <p>Reason: The allele for violet flower shows blending with white flower.</p>	1
16	<p>Assertion: Sparrow eating seed shows (+,-) population interaction.</p> <p>Reason: This interaction is important for population stability of prey.</p>	1
	(SECTION B)	
17	<p>How is <i>Oxalis</i> and <i>Commelina</i> different from Rose and <i>Petunia</i> in terms of pollination?</p> <p style="text-align: center;">OR</p> <p>Explain the menstrual events that occur due to: (i) LH surge (ii) High level of progesterone.</p>	2 1+1
18	Explain the genetic disorder that occurs due to Trisomy of autosomal chromosome.	2
19	How is vaccine different from antibiotics? Name the first antibiotic discovered.	2
20	<p>(A) Name the process that we use to generate 1 billion replica of DNA.</p> <p>(B) _____ polymerase is obtained from bacterium _____.</p>	1 + 0.5×2= 1
21	Differentiate between ex-situ and in-situ conservation.	2
	(SECTION C)	
22	Explain any one method of contraception in each of the following cases:	1

	(i) contraception having few side effects but no chances of failure. (ii) contraception with no side effect but chances of failure. (iii) contraception which can protect from STI.	+1 +1
23	State three reasons why Mendel selected pea plant for his experiments. OR Briefly explain the structure of DNA in terms of its monomeric units.	3
24	Couples could be assisted to have children through ART. Which of the ART technology/technologies could help the couple if: (a) Female is not able to produce gametes but can provide suitable environment for fertilization. (b) If the mobility and count of sperm is low. (c) If both of them are not able to produce gametes.	3
25	Draw a well labeled diagram of polypeptide structure produced by B-lymphocytes involved in immune response.	3
26	Write the equation of Hardy-Weinberg equilibrium. How does genetic drift and gene flow affect this equilibrium?	3
27	 <p>(a) What are the selectable markers present in the plasmid shown? (b) Which of the part out of A to D shown in the diagram (i) controls the copy number. (ii) is the cloning site.</p>	1 + 2
28	Explain three different attributes of population that are not applied on individual. OR Explain using example any two major Evil Quartet that effect the biodiversity.	3 1.5 +1.5
(SECTION D)		

<p>29</p>	<p>Observe the graphical representation of Meselson and Stahl experiment. Answer the following questions.</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p>a</p> </div> <div style="text-align: center;">  </div> </div> <div style="display: flex; justify-content: space-around; align-items: flex-start; margin-top: 20px;"> <div style="text-align: center;">  <p>b</p> </div> <div style="text-align: center;">  </div> </div> <p>(a) What conclusion will you draw on the basis of this graphical representation about the mode of DNA replication? Why?</p> <p>(b) What is proportion of light and intermediate strand obtained after 40 min to the start of experiment?</p> <p>(c) _____ is used for density gradient centrifugation.</p> <p style="text-align: center;">or</p> <p>What is role of Ammonium chloride in this experiment?</p>	<p>2 + 1 + 1</p>
<p>30</p>	<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="text-align: center;">  <p>1)</p> </div> <div style="text-align: center;">  <p>2)</p> </div> </div> <p>(A) Name the drug: (i) shown in "1" and it's one impact. (ii) obtained from plant "2".</p> <p>(B) What are withdrawal syndromes?</p> <p>(C) Smoking increases _____ content in blood and reduces the concentration of haemobound oxygen.</p> <p style="text-align: center;">Or</p> <p>Name the plant from which Cocaine is obtained?</p>	<p>2 + 1 + 1</p>
<p>(SECTION E)</p>		
<p>31</p>	<p>Explain the key difference between spermatogenesis and oogenesis, including it's site of occurrence, number of gametes formed, ploidy of each cell.</p> <p style="text-align: center;">OR</p> <p>Explain diagrammatically how the 7 celled 8 nucleus condition formed in a typical angiosperm embryo sac?</p>	<p>5 5</p>
<p>32</p>	<p>Transcription in prokaryotes different from the eukaryotes. Explain with respect to the site of transcription, the enzymes involved and the post transcription modifications.</p>	<p>5</p>

