

**NAVODAYA VIDYALAYA SAMITI**

**CLASS: XII**

**BIOLOGY (044)**

**PRE BOARD II (2021-22)**

**Max. Marks 35**

**Time allowed: 2 hours**

**General Instructions:**

- i) All questions are compulsory.
- ii) The question paper has three sections and 13 questions. All questions are compulsory.
- iii) Section–A has 6 questions of 2 marks each; Section–B has 6 questions of 3 marks each; and Section–C has a case-based question of 5 marks.
- iv) There is no overall choice. However, internal choices have been provided in some questions. A student has to attempt only one of the alternatives in such questions.
- v) Wherever necessary, neat and properly labeled diagrams should be drawn.

**MARKING SCHEME**

<b>Q.No</b>	<b>VALUE POINTS</b>	<b>MARKS</b>
1	Antitoxin / Antivenoms / Preformed antibodies = 1/2 - Whenever quick immune response is required we need to directly inject preformed antibodies / Antitoxins = 1/2 + 1/2 - passive immunity is provided = 1/2	2
2	Immunosuppressive agent- cyclosporine A- 1/2+1/2 Fungus- <i>Trichoderma polysporum</i> – 1/2+ 1/2 OR Biological control- bacteria / <i>Bacillus thuringensis</i> (Bt), available in sachets as dried spores+ water spray	2
3	Cannabinoids- 1 , <i>Cannabis sativa</i> , cardiovascular system= 1/2+1/2	2
4.	(a) Statin - <i>Monscus purpureus</i> (b) Citric acid- <i>Aspergillus niger</i> (c) Penicillin- <i>Penicillium notatum</i> (d) Butyric acid- <i>Clostridium butylicum</i>	1/2 X4 =2
5	(a) (i) Expanding population (Triangular) (ii) Stable population (Bell shaped) (iii) Declining population (Cube shaped) (b) We take stable population pyramid as ideal because our aim is to stabilize the population.	1/2 X 4 =2
6	(i) a - Unlimited food and space. b - Limited food and space. (ii) Curve a OR Internal fat oxidation (b)low atmospheric oxygen body compensate by increasing RBC, decreasing the binding affinity of haemoglobin	2



<p>Or</p> <p>a. Farm Land II. (½ mark)</p> <p>Bt crop. (½ mark) Because the use of pesticides is highly reduced for Bt crop // Decrease of pesticide used is also more significant for Bt crop. (1 mark)</p> <p>b. In Bt cotton a cry gene has been introduced from bacterium <i>Bacillus thuringiensis</i> (Bt) which causes synthesis of a toxic protein. This protein becomes active in the alkaline gut of bollworm feeding on cotton, punching holes in the lining causing death of the insect. (2 marks)</p> <p>However; a Non Bt crop will have no effect on the cotton bollworm/ the yield of cotton will decrease / non Bt will succumb to pest attack. (1 mark)</p>	
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