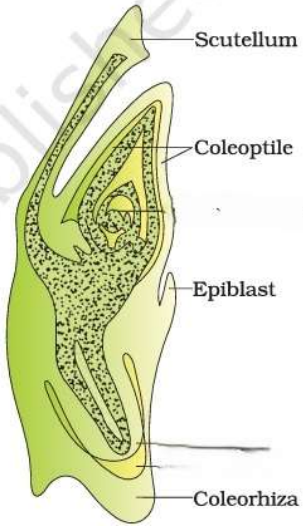
BSEH MARKING SCHEME

CLASS- XII Biology (Model Paper 2025-26) Code: A

- **The answer points given in the marking scheme are not final. These are suggestive and indicative. If the examinee has given different, but appropriate answers, then he should be given appropriate marks.**

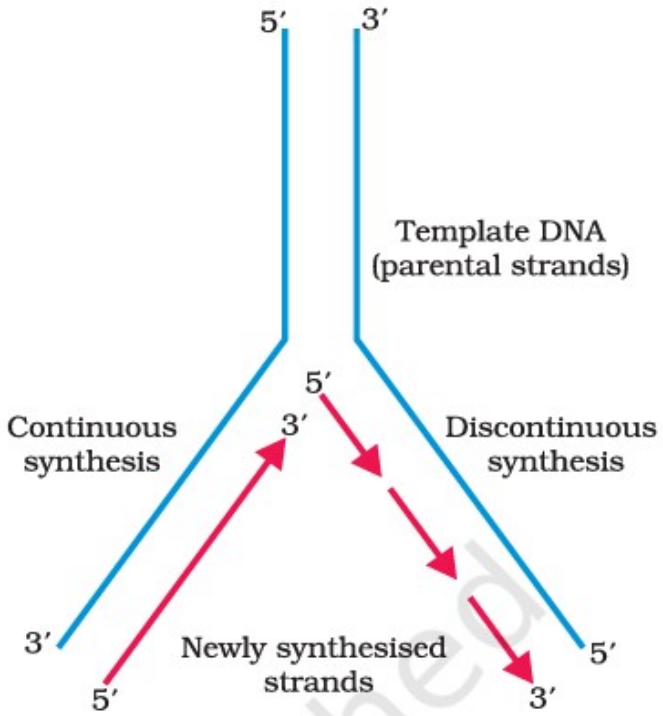
Q. No.	Part no.	Answers	Marks	Total Marks
1.	---	b) Diploid	1	1
2.	---	c) oxytocin	1	1
3.	---	b) Green seed	1	1
4.	---	d) 0	1	1
5.	---	b) AIDS	1	1
6.	---	a) curd	1	1
7.	---	d) none of these	1	1
8.	---	c) Population density	1	1
9.	---	a) Energy	1	1
10.	---	Ovum and second polar body	½ + ½	1
11.	---	RNA Polymerase II	1	1
12.	---	Inflorescences	1	1
13.	---	β-galactosidase	1	1
14.	---	Thymidine	1	1

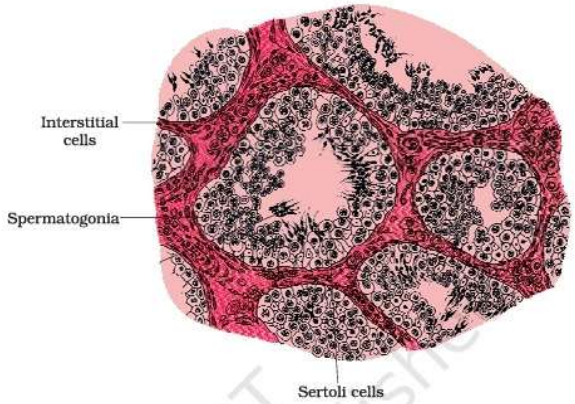
15.	---	Temperature and acid/alkali	½ + ½	1
16.	---	b) Both A and R are true, and R is not the correct explanation of A.	1	1
17.	---	c) A is true but R is false.	1	1
18.	---	d) A is false but R is true.	1	1
19.			½ for each correct labelling	2
		Or		
		Hydrilla and *Vallisneria*	½ + ½	
		i) Pollen grains are long and ribbon like ii) They have mucilaginous covering	½ + ½	
20.		Size of genome: 3164.7 million bp	½	2
		Largest gene: dystrophin	½	
		Chromosome with most gene: 1	½	
		Chromosome with least gene: Y	½	
21.		Homology: thorn and tendrils of	1	2

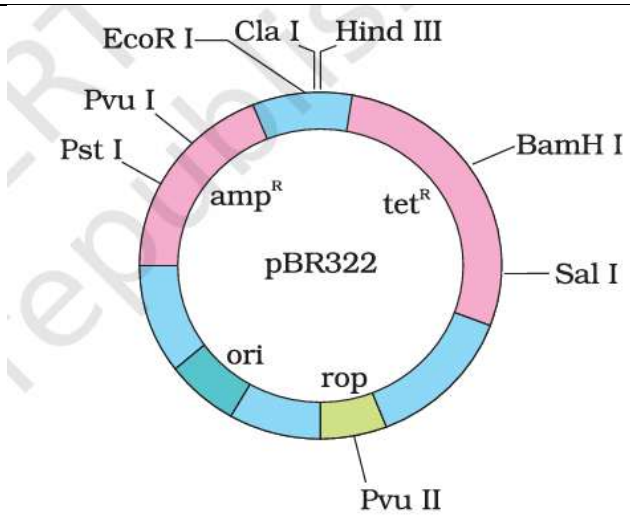
		Bougainvillea and *Cucurbita*		
		Analogy: Sweet potato (root modification) and potato (stem modification)	1	
22.		*Saccharomyces cerevisiae*	1	2
		Monascus purpureus	1	
23.		Polymerase chain reaction (PCR)	1	2
		because it amplifies the target sequence exponentially.	1	
	Or			
		Enzyme Linked Immune Sorbent Assay test	1	
		ELISA is based on the principle of antigen-antibody interaction	1	
24.		Somaclones are plants produced by tissue culture that are genetically identical to the parent plant.	1	2
		Somatic hybrids are hybrid produced by fusion of isolated protoplasts from two different varieties of plants.	1	
25.	a)	Commensalism	1	2
	b)	Parasitism	1	
	Or			

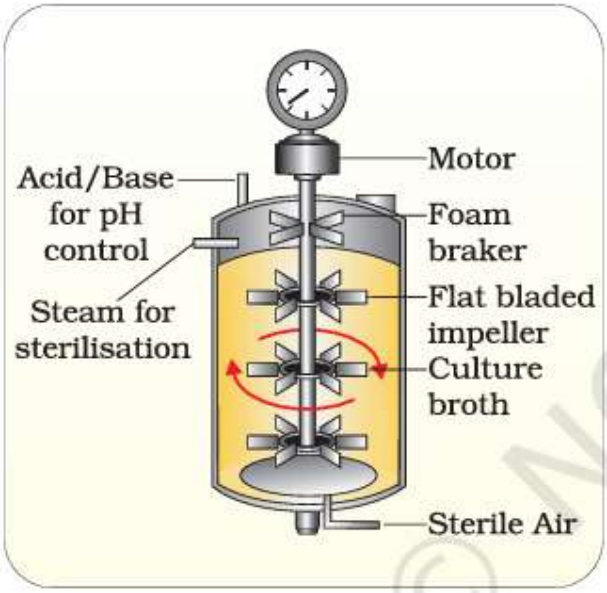
		K = Carrying capacity	1	
		r = Intrinsic rate of natural increase	1	
26.		GPP – R = NPP	1	3
		Gross primary productivity of an ecosystem is the rate of production of organic matter per unit area over a time period by plants during photosynthesis.	1	
		Gross primary productivity excluding respiration losses (R), is the net primary productivity	1	
27.	a)	biosphere reserves, national parks, wildlife sanctuaries, sacred groves	Any three, ½ each	3
	b)	Zoological parks, botanical gardens, wildlife safari parks	½ each	
28.	a)	*Rhizobium*	1	3
	b)	Cyanobacteria/ *Anabaena/ Nostoc/ Oscillatoria*	Any one 1	
	c)	Mycorrhiza	1	
		Or		
		Methanogens	½	

		Methane, Carbon dioxide (CO_2), Hydrogen (H_2)	½ + ½ + ½	
		cooking and lighting	½ + ½	
29.		**Stabilization**: in which more individuals acquire mean character value	½ + ½	3
		Directional change: more individuals acquire value other than the mean character value	½ + ½	
		Disruption: more individuals acquire peripheral character value at both ends of the distribution curve	½ + ½	
30.		z - beta-galactosidase	½ + ½	3
		y - permease	½ + ½	
		a - transacetylase	½ + ½	
	Or			

			1 mark of correct diagram, ½ for each correct label	
31.	i)	Artificial insemination	1	4
	ii)	Expensive Required infrastructure and Expertise Or ICSI: Intra Cytoplasmic Sperm Injection IUI: Intra Uterine Insemination	1 +1 1+ 1	
	iii)	GIFT (Gamete Intra-Fallopian Transfer)	1	
32.	i)	Widal Test	1	4
	ii)	Typhoid	1	
	iii)	*Salmonella typhi* Or Yes, antibiotics can kill bacteria	1 ½ + ½	

	iv)	Pneumonia	1	
33.	a)		3	5
	b)	Spermatogonia	1	
	c)	Interstitial cells/ Leydig cells	1	
		Or		
		3	½	
		Seminal vesicles, Two	½ + ½	
		Prostate gland, One	½ + ½	
		Bulbourethral gland, Two	½ + ½	
		Fructose, Calcium , Certain enzymes	½ + ½ + ½	

34.			2	5
		'Ori' site: It is essential for replication within host cell.	½ + ½	
		Selectable markers (amp^R & tet^R): which helps in identifying and eliminating non transformants and selectively permitting the growth of the transformants.	½ + ½	
		Cloning sites (8 sites): In order to link the alien DNA, the vector needs to have very few, preferably single, recognition sites for the commonly used restriction enzymes.	½ + ½	
		Or		

			3	
		Impeller for proper mixing with minimum damage	½	
		Motor for rotation	½	
		Sterile air for contamination free environment	½	
		pH control for optimum conditions	½	
35.		Aneuploidy	½	
		a) Down's syndrome;	½	
		i) It is due to trisomy of chromosome no. 21	½	5
		ii) individual is short statured/ small round head, furrowed tongue and partially open mouth	½	
		b) Klinefelter's Syndrome;	½	

		i) It is due to an additional copy of X chromosome (karyotype of 47, XXY). ii) Gynaecomastia / Such individuals are sterile	½ ½	
		c) **Turner's Syndrome**; i) It is caused due to the absence of one of the X chromosomes, i.e., 45 with X0 ii) Such females are sterile as ovaries are rudimentary	½ ½ ½	
		Or		
	a)	Linkage	1	
	b)	*Drosophila melanogaster*	1	
	c)	i) They could be grown on simple synthetic medium in the laboratory. ii) They complete their life cycle in about two weeks iii) a single mating could produce a large number of progeny flies. iv) the male and female flies are easily distinguishable. v) it has many types of hereditary variations that can be seen with low power microscopes.	Any three, 1 mark each	