B. N. Bandodkar College of Science, Thane

S. Y. B. Sc. (Sem IV) Examination 2014-15

Add. Lieml / ATKT June 2015

USBO402

Duration $2^{1/2}$ Hrs Total Marks 75

N.B. 1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Draw neat labelled diagrams wherever necessary.

Q.1	a)	Discuss in detail defense mechanism in plants.	10
		OR	
	a)	Give an account of the types of stele.	10
	b)	Discuss the types of vascular bundle with the help of neat and labeled diagrams.	10
		OR	
	b)	What are mechanical tissues? Explain any one studied by you.	10
Q.2	a)	What is xerosere? Discuss briefly various stages of it.	10
		OR	
	a)	Describe protected area network with reference to different forms of it.	10
	b)	What is a phytochrome? Explain role of phytochromes in flowering process.	10
		OR	
	b)	Discuss vernalization process with suitable example and add a note on applications of it.	10
Q.3	a)	Describe amino acid activation and initiation with reference to translation of genetic message in Eukaryotes.	10
		OR	
	a)	Describe the nature of the genetic code.	10
	b)	Discuss RNA processing with reference to Polyadenylation.	10
		OR	
	b)	A variety of a garden pea with yellow and round seed characters was crossed with another variety having the characters as green wrinkled seeds. In the resulting F1 generation all plants produced yellow and round seeds. These plants were carefully selfed further and the resulting progeny in F2 generation was consisting of four types of seeds such as 315 yellow and round seeds, 101 yellow and wrinkled seeds, 108 green and round seeds and 32 green and wrinkled seeds. According to Mendel's principle, the F2 in a dihybrid cross segregates in the ratio 9 yellow and round seeds, 3 yellow and wrinkled seeds, 3 green and round seeds and 1 green and wrinkled seed. Calculate the chi-square value for the following data. Does the observed results fit with the hypothetical ratio? According to the Chi square table critical value for p-at 0.05 probability level and 3 degree of freedom is 7.82.	10
Q.4		Write short notes on **any three** of the followings.	15
	a)	I-girders	
	b)	Phloem as a conducting tissue	
	c)	Principle and role of ecotourism	
	d)	Plants as indicators of soil and water conditions	
	e)	Transfer RNA (tRNA).	
	f)	RNA polymerase in prokaryotes	