B.Sc. (Honours) Examination, 2021
Semester-V
Statistics (Practical)
Course: DSE-2B (Demography and Vital Statistics (Practical))
Full Marks: 20 Time: 2 Hours

(1) The population of India, as recorded in each of these decennial censuses, is given below:

Census Year	Population (in millions)
1901	238.3
1911	252.0
1921	251.2
1931	278.9
1941	318.5
1951	361.0
1961	439.1
1971	547.0
1981	683.3
1991	846.3

Fit logistic curves to the data using two different methods. Draw the fitted curves over the observed data points. 6+6

(2) A part of the life table is given here with most of the entries missing. On the basis of the available figures, supply the missing ones.

x	l_x	d_x	q_x	L_x	T_x	e_x^0
10	85570		0.591			
11			0.633			
12			0.682			
13			0.743			
14			0.821			
15			0.916			
16			1.059			
17			1.116			
18			1.218			
19			1.336		4081752	

Hence determine, according to the life table, the probability that
(i) a child of age 10 will live at least 5 years more,
(ii) two children aged 10 and 11 will each live at least 5 years more, and
(iii) of two children aged 10 and 11, at least one will die within 9 years. 5+3