

2012  
GROUP - B

**(Demographic Analysis)**

1. (a) Give a comprehensive definition of population census. Explain the salient features of a population census. Mention the demographic importance of a census.  $2+10+4=16$

Or

- (b) (i) What are the sources of demographic data? Explain the problems that are usually faced in collecting accurate demographic data.  $2+8=10$

- (ii) Explain the uses of demographic data in the management of public health programmes.  $6$

2. (a) (i) What do you mean by fertility ? Explain the importance of fertility studies.

1+5=6

(ii) Define live-birth. The number of live-births and the number of females by age are given below. Estimate General Fertility Rate, Age-specific Fertility Rate and Total Fertility Rate from these data.

2+12=14

Age group	No. of births	No. of females
15-19	2000	38851
20-24	7857	34563
25-29	5014	32907
30-34	2425	28412
35-39	1068	22135
40-44	280	18359
45-49	22	16812

Or

(b) (i) 'If the age structure of two populations is not uniform, direct comparison of the crude death rates of the two populations may be misleading'. —Elaborate the statement.

- (ii) Discuss the uses of standardised death rate. Estimate direct standardised death rates of population A and population B from the following data and give comments on the results.  $4+10+2=16$

Age group	Age specific population of the standard population	Age specific death rates of actual population (in 1000)	
		A	B
0-10	38826	30.32	19.51
10-20	43837	7.31	5.10
20-30	49484	3.26	2.08
30-40	50855	4.18	3.25
40-50	46129	7.34	6.38
50-60	39840	14.18	15.81
60-70	26825	32.41	37.75
70+	14210	60.28	49.23

3. (a) (i) The population of a place increased from 141294 in 2001 to 182382 in 2011. During 2001-11 the natural increase in the population was 31460. From this information estimate the volume of migration and the migration rate during 2001-11.  $2+2=4$

- (ii) What do you mean by survival rate? Estimate the age-specific and total migration for a place having following population statistics under both reverse and forward survival rate methods.

$$2+10=12$$

Age group		Population		Survival rate
2001	2011	2001	2011	
0-10	10-20	27560	25926	0.9115
10-20	20-30	48132	50937	0.9298
20-30	30-40	90184	93584	0.9097
30-40	40-50	118525	99697	0.8902
40-50	50-60	86475	79586	0.8024
50-60	60-70	70832	59891	0.7193
60-70	70-80	39398	23925	0.4835
70+	80+	31748	20310	0.4790

Or

- (b) (i) Distinguish between place of origin and place of destination citing suitable example. 4

- (ii) Discuss the merits and demerits of place of birth statistics used for measuring migration. 8

- (iii) Estimate the crude immigration rate and crude emigration rate from the data given below.  $2+2=4$

Total population = 962800

Total immigration = 44598

Total emigration = 14445

4. (a) (i) Define median age. Estimate the median age for population A and population B from the data given below. State the reasons for variations in the median age, if any, of the two populations.

$2+8+2=12$

Age group	No. of persons in population	
	A	B
0-10	1565914	114855
10-20	1481597	93817
20-30	1228743	81393
30-40	1080877	102215
40-50	1087038	79677
50-60	1195170	45166
60-70	1080317	30760
70 +	1067038	23983

- (ii) Write a note on the suitability of dependency ratio as an indicator of economic dependence. 4

Or

- (b) What do you mean by population distribution and population redistribution? Explain the factors that affect the pattern of population distribution. 4+12=16

5. (a) Estimate the annual geometric and exponential growth rates of population if it grows from 4760432 in 2001 to 5315139 in 2011. Project the population for the year 2021 using the estimated geometric and exponential growth rates separately under the two methods.

$$3+3+3+3=12$$

Or

- (b) What do you mean by population growth? Explain the usefulness of population growth analysis. 2+10=12