

### Population Change and Public Health Exercise 4A

1. The crude birth rate of a country was 40 per 1000 population in a particular year. In the same , the proportion of women in the age group 15 to 49 years was 20%. The general fertility rate for that country will be
  - A. 300
  - B. 80
  - C. 200
  - D. 20
  
2. Child-woman ratio is
  - A. Ratio of children under 15 to total women population
  - B. Ratio of children under age 5 to total women population
  - C. Ratio of children under 15 to population of women in the child bearing age groups
  - D. Ratio of children under 5 to population of women in child bearing age groups
  
3. As a measure of fertility, the child-woman ratio will
  - A. Under-estimate the level of fertility
  - B. Over-estimate the level of fertility
  - C. Neither under-estimate or over-estimate the level of fertility
  - D. None of the above
  
4. To calculate child-woman ratio, you need a
  - A. A complete vital registration system
  - B. Census
  - C. Both census data and data from vital registration system
  - D. None of the above
  
5. Child woman ratio should be approximately equal to
  - A. Five times of gross fertility rate especially in setting with low child mortality
  - B. Five times the crude birth rate
  - C. One fifth of gross fertility rate
  - D. None of the above
  
6. The numerator for calculating crude birth rate includes
  - A. All live births
  - B. All births that survived to their first year of live
  - C. All live births and still births
  - D. None of the above
  
7. The tendency of the population to continue to grow after reaching replacement fertility is due to (check all that apply)
  - A. Larger cohorts entering into reproductive years due to past high fertility
  - B. Decline in mortality at the older ages
  - C. The population does not grow once its achieves replacement level fertility

- D. Increase in marriage rates
8. A country with a child-woman ratio in the range of 150 to 200 should have
- A. Crude birth rates in the range of 20- 30
  - B. Crude birth rates in the range of 10 to 15
  - C. Crude Birth rates in the range of 40 to 50
  - D. None of the above
9. The denominator for general fertility rate relates to
- A. All women
  - B. The total population
  - C. Women in the reproductive age group
  - D. Women and men in the reproductive age group
10. If general fertility rate for South Africa is 100, then the crude birth rate should be in the range of
- A. 10 to 20
  - B. 20 to 30
  - C. 200 to 400
  - D. 50 to 80
11. Which of the following is the most common source for fertility data in developing countries
- A. Census
  - B. Vital registration
  - C. Sample surveys
  - D. None of the above
12. General fertility rate
- A. Can be calculated from census data
  - B. Approximately half of crude birth rate
  - C. Better measure of fertility than total fertility rate
  - D. Approximately two times of crude birth rate
13. 'Parity' refers to
- A. Total number of pregnancies a woman had
  - B. Total number of births a woman had
  - C. Total number of live births a woman had
  - D. Total number of living children a woman has at the time of survey

## Population Change and Public Health Exercise 4B

1. Uganda has the youngest age structure in the world and Italy has the oldest. If the TFR be equal in two countries, which of country will have higher birth rate?
  - A. Uganda
  - B. Italy
  - C. Since the TFR is the same, crude birth rate will be the same in both countries
  - D. Can be ascertained from the information given
2. Summation of age specific fertility rates over all age groups will yield
  - A. General fertility rate
  - B. General reproduction rate
  - C. Total fertility rate
  - D. Crude birth rate
3. The age specific fertility rates (ASFR) for the age groups 15-29 and 30-44 is 300 and 250 respectively. Assuming that there is no fertility before age 15 and after age 45, the total fertility rate for this population will be
  - A. 6.0
  - B. 4.0
  - C. 8.3
  - D. 2.0
4. At replacement levels, the total fertility rate will be
  - A. Exactly equal to 2
  - B. Slightly less than 2
  - C. Slightly more than 2
  - D. Can be more than or less than 2
5. In a hypothetical population, all the fertility takes place at age 25 and 35. Each woman has two births at age 25 and one birth at age 35. What is the total fertility rate in this hypothetical population
  - A. 2
  - B. 3
  - C. 4
  - D. Cannot be estimated from the information given
6. Which of the following measures can be calculated from census only?
  - A. Total fertility rate
  - B. Crude birth rate
  - C. Children ever born
  - D. Age specific fertility rate

7. TFR in Uganda is 6 births per women and TFR in South Africa is 3 births per women, The differences observed may be due
  - A. Age differences in the population between Uganda and South Africa
  - B. Real differences between the number of children born per woman
  - C. Both A and B
  - D. None of the above
  
8. Which of the following is the best measure to compare fertility across countries
  - A. Crude birth rate
  - B. General fertility rate
  - C. Total fertility rate
  - D. Gross reproduction rate
  
9. Total fertility rate can be calculated from (check all those are correct)
  - A. From census only
  - B. From vital registration data only
  - C. Needs data from both census and vital registration system
  - D. Can be calculated from representative surveys of women in the reproductive age
  
10. Total fertility rate gives the
  - A. Actual number of children a woman will during her life time
  - B. Number of children a woman will have if she experiences the current age-specific fertility rates throughout her life
  - C. Number of children she had at the time of survey
  - D. None of the above
  
11. If the children ever born in a country is equal the current total fertility rate, that implies that
  - A. Fertility has been declining in last 30 years or so in that country
  - B. Fertility is increasing in last 30 years or so in that country
  - C. Fertility has stayed the same in last 30 years or so in that country
  - D. None of the above

## Population Change and Public Health Exercise 4C

- At replacement levels, the total fertility rate will be
  - Exactly equal to 2
  - Slightly less than 2
  - Slightly more than 2
  - Can be more than or less than 2
- If  $NRR=1$ , it implies
  - The crude birth rate is equal to crude death rate
  - The population will stop growing
  - Will be equal to GRR if there is no mortality among women up to 13 years of age
  - Will be equal to GRR if there is no mortality among women up to the end of child bearing years
- Gross reproductive rate (GRR) is
  - Is approximately half of total fertility rate (TFR)
  - Is always less than Net reproduction rate (NRR)
  - Is equal to General Fertility rate (GFR)
  - Will be different in two countries with same TFR and sex ratios but different female mortality rates from birth to end of child bearing years
- In a hypothetical bird population, all the births take place at age 1 and 3. Each female bird gives two births at age 1 and one birth at age 3. 80% of all female birds born survive to age 1 and 75% survive to age 3. The sex ratio at birth is 105. The TFR,
  - 3, 1.46, 1.15
  - 3, 1.75, 2
  - 4, 2, 1
  - Can be estimated from the data given
- The TFR in a country is 4.8. The sex ratio at birth is 104. The GRR for this country will be
  - 2.35
  - 2.45
  - 3.0
  - 4.2
- The TFR in a country is 3.2. The sex ratio is 100 at birth. There is no mortality among women from birth till the end of child bearing years. The GRR and NRR in this country are
  - 2, 1
  - 1, 2
  - 2, 1
  - 1.6, 1.6

7. The net reproduction rate differs from gross reproduction rate in that
  - A. The NRR takes into account the mortality among women through their reproductive years but GRR assumes that all women who are born will survive through their reproductive years
  - B. The NRR takes into account both the daughters and sons born but GRR takes into account only the daughters born
  - C. The NRR is based on census data while GRR is based on vital registration data
  - D. None of the above
  
8. Calculation of GRR and NRR assume that
  - A. Age specific fertility and mortality rates will decline over time
  - B. The age specific fertility and mortality rates will remain the same over time
  - C. The age specific fertility and mortality rates will increase over time
  - D. None of the above
  
9. An NRR of 4 means that a woman will be replaced by
  - A. 16 daughters after 3 generations
  - B. 64 daughters after 3 generations
  - C. 4 daughters after 3 generations
  - D. None of the above
  
10. The population does not stop growing when  $NRR=1$  as
  - A. Births are occurring in much larger cohorts as a result of past high fertility while deaths are occurring in smaller cohorts resulting in overall high crude birth rate than death rate
  - B. The total number of births occurring to a woman are increasing over time  
The death rates are declining over time
  - C. None of the above