



**FACULTY OF SCIENCE AND TECHNOLOGY**  
**END OF SEMESTER EXAMINATIONS - APRIL 2025**

**PROGRAMME: BSEM**

**YEAR/SEM: YEAR 1/SEMESTER 2**

**COURSE CODE: BSE 1201**

**NAME: ENVIRONMENT AND HUMAN POPULATION DYNAMICS**

**DATE: 2025-05-14**

**TIME: 9:00AM-12:00PM**

**INSTRUCTIONS TO CANDIDATES:**

1. Read the instructions very carefully
2. The time allowed for this examination is STRICTLY three hours
3. Read each question carefully before you attempt and allocate your time equally between all the Sections
4. Write clearly and legibly. Illegible handwriting cannot be marked
5. Number the questions you have attempted
6. Use of appropriate workplace examples to illustrate your answers will earn you bonus marks
7. Any examination malpractice detected will lead to automatic disqualification.

**DO NOT WRITE ANYTHING ON THE QUESTION PAPER**

## Section A (Attempt all questions in this section. 40 marks)

### Question 1:

1. Which fertility measure accounts for births per 1,000 women of childbearing age (15-49 years) in a given year?
  - A. Crude Birth Rate
  - B. General Fertility Rate
  - C. Age-Specific Fertility Rate
  - D. Total Fertility Rate
2. What does "mortality" refer to in demography?
  - A. The number of births in a population
  - B. The incidence of death within a population
  - C. The study of aging in a society
  - D. The process of recording population growth
3. What is population composition?
  - A. The total number of people in a country
  - B. The description of a population according to its characteristics
  - C. The rate at which a population grows
  - D. The density of population in urban areas
4. A high maternal mortality rate is an indicator of:
  - A. High fertility levels
  - B. Poor healthcare services for pregnant women
  - C. Low life expectancy
  - D. A rapidly aging population
5. Which age group is typically considered the economically active population?
  - A. 0-12 years
  - B. 13-19 years
  - C. 20-64 years
  - D. 65 years and above
6. How can education impact population composition and environmental sustainability?
  - A. Education has no effect on population composition
  - B. Higher education levels are associated with lower birth rates
  - C. Education leads to an increase in the youth population
  - D. Education is only relevant to urban populations
7. A country with a declining fertility rate may experience:
  - A. A rapidly growing population
  - B. An increase in the youth population
  - C. Population aging and labor shortages
  - D. A decrease in life expectancy
8. Polygamy is a form of nuptiality that includes both polygyny and polyandry.
  - A. True
  - B. False
9. High unemployment rates usually lead to an increase in marriage rates.
  - A. False
  - B. True

10. What does "nuptiality" refer to in demography?
- A. The study of fertility patterns
  - B. The study of marriage, divorce, and widowhood patterns in a population
  - C. The process of population aging
  - D. The total number of births in a population
11. Which of the following best defines fertility in demography?
- A. The number of children a woman wants to have
  - B. The biological ability to conceive and bear children
  - C. The actual reproductive performance of an individual or population
  - D. The process of childbirth
12. Which of the following best defines migration in demography?
- A. The movement of people within a country only
  - B. The movement of people from rural to urban areas exclusively
  - C. The movement of people from one place to another, involving a change of residence
  - D. The natural increase in a population due to births and deaths
13. The divorce rate in a country has no impact on fertility levels.
- A. True
  - B. False
14. A high divorce rate in a population is likely to:
- A. Decrease fertility rates
  - B. Increase the total fertility rate
  - C. Has no effect on demographic patterns
  - D. Increase child mortality
15. Which of the following is NOT a major factor influencing mortality rates?
- A. Healthcare access
  - B. Economic conditions
  - C. Fertility rates
  - D. Environmental factors
16. Census data is collected every year in all countries.
- A. True
  - B. False
17. What is the carrying capacity of an environment?
- A. The total population of a species
  - B. The maximum population size that an environment can sustain
  - C. The average density of a population
  - D. The minimum number of individuals needed for genetic diversity
18. Rapid human population growth absolutely has no negative consequences on ecosystems
- A. True
  - B. False
19. Surveys can be a reliable source of population data but are usually conducted on a sample rather than the entire population
- A. True
  - B. False
20. A higher age at first marriage is generally associated with lower fertility rates.
- A. True
  - B. False

## Section B (Answer any 3 questions. 20 marks each)

### Question 1:

- a. What do you understand by the term migration? (1 mark)
- b. Differentiate between voluntary and forced migration (4 marks)
- c. Give the various types of migration (15 marks)

### Question 2:

- a. What is marriage? (2 marks)
- b. Discuss the differences and similarities between church marriage and customary marriage (10 marks)
- c. The age at which individuals enter their first marriage has a significant impact on fertility rates within a population. Discuss (8 marks)

### Question 3:

- In human population dynamics, fertility refers to the reproductive capacity of individuals or populations, specifically the ability to produce offspring/young ones. It is a key demographic factor that contributes to the growth, decline, or stabilization of a population. With examples discuss how the following factors influence the fertility of a population; (4 marks each)
- i. Education levels
  - ii. Access to healthcare services
  - iii. Religious beliefs
  - iv. Family planning & contraception
  - v. Government policies

### Question 4:

- a. Define the term fertility as applied in demography 2 marks
- b. What is the formula for calculating the crude fertility rate (CFR)? 3 marks
- c. Why is the crude fertility rate considered a "crude" and not an accurate measure of fertility? 6 marks
- d. Fertility in human populations is influenced by various factors. With examples, discuss the determinants of fertility in human populations. 9 marks

### Question 5:

- a. Define a census (2 marks)
- b. What characteristics must a good census possess? (18 marks)

### Question 6:

- i). With examples define the following terms (2 marks each)
  - a. Carrying capacity
  - b. Sex-specific death rates
  - c. Age-specific death rates
  - d. Cause-specific death rates
  - e. Divorce
- ii). Mbale City in Eastern Uganda had 400 male deaths in the year 2023. In the same year, Mbale City had a mid-year male population of 18,000 people. Calculate the sex-specific death rate for Mbale City in 2023. (10 marks)