

QB365 Question Paper Software
12th Standard - Biology
Reproductive Health Case Study Questions

Exam Time: 00:30 Hrs

Date: 2025-10-14

Total Marks: 8

Questions:

Case Study Questions

1. Read the following and answer any four questions from (i) to (v) given below:

Population is defined as the total number of individuals of a species present in a particular time. The scientific study of human population is called demography. The rapid increase in a relatively short period is called population explosion. Four basic processes are involved in the change in the population size. Population shows two types of growth; exponential and logistic. (i) Which of the following factors are responsible for population explosion?

- A. Decrease in number of people of reproductive age
- B. Decline in infant mortality rate
- C. Increase in maternal mortality rate
- D. Rapid decline in death rate

(a) A and B (b) Band C (c) B and D (d) A and D

(ii) What is the shape of curve showing logistic growth?

(a) Sigmoid (b) J-shape (c) Linear (d) Hyperbola

(iii) What is immigration?

(a) Number of individuals of the population who left the habitat. (b) Number of individuals that enter the habitat.

(c) Number of individuals of a species per unit area at given time. (d) Number of births per 1000 individuals per year.

(iv) Equation of Verhulst-Pearl logistic growth is

(a) $\frac{dN}{dt} = rN$ (b) $\frac{dN}{dt} = \frac{K-N}{k}$ (c) $\frac{dN}{dt} = rN \left(\frac{K-N}{K} \right)$ (d) $\frac{dN}{dt} = \left(1 - \frac{N}{K} \right) r$

(v) Which of the following contributes to decrease in population?

(a) Fertility (b) Natality (c) Social mobility (d) Emigration

2. Read the following and answer any four questions from (i) to (v) given below:

A 23 year old Sahil has been diagnosed with an infection of reproductive tract caused by bacteria. He complains about burning sensation during urination, pus-containing discharge and pain around genitalia. This infection has incubation period of 2-5 days but can be cured.

(i) From which disease is Sahil suffering?

(a) Chlamydia (b) Herpes (c) Gonorrhoea (d) Syphilis

(ii) Which among the following reproductive tract infections is transmitted by bacteria?

(a) Trichomoniasis (b) Chancroid (c) Genital warts (d) Both (a) and (b)

(iii) Which mode of treatment would be useful for Sahil?

(a) Cryosurgery (b) Use of Podophyllum preparation (c) Use of antibiotic ampicillin (d) It cannot be treated

(iv) What technique was used to diagnose Sahil's disease?

(a) Gram staining of discharge and culture (b) ELISA Test (c) Antibody detection (d) Antigen test

(v) Find the odd one out

**(a) Treponema
pallidum**

**(b) Neisseria
gonorrhoeae**

**(c) Haemophilus
ducreyi**

**(d) Trichomonas
vaginalis**

Answers Key:

Case Study Questions

1. **(i) (c) :** A rapid decline in death rate, maternal mortality rate, infant mortality rate and an increase in number of people in reproductive age are reasons for population explosion.
(ii) (a) : Logistic growth shows S-shaped or sigmoid growth curve.
(iii) (b) :
(iv) (c) :
(v) (d) : Emigration is the number of individuals of the population who left the habitat.
2. **(i) (c) :** Sahil is suffering from gonorrhoea, a sexually transmitted disease caused by a bacterium *Neisseria gonorrhoeae*.
(ii) (b) : Trichomoniasis, chancroid and genital warts are STDs caused by protozoa, bacteria and virus respectively.
(iii) (c) : Gonorrhoea can be cured through use of appropriate antibiotics like penicillin and ampicillin.
(iv) (a)
(v) (d) : *Treponema pallidum*, *Neisseria gonorrhoeae* and *Haemophilus ducreyi* are bacterial organisms which cause syphilis, gonorrhoea and chancroid respectively. *Trichomonas vaginalis* is an protozoan which causes trichomoniasis.