
CBSE Class 12 Biology
NCERT Exemplar Solutions
CHAPTER 4
REPRODUCTIVE HEALTH

Multiple Choice Questions (MCQs)

1. The method of directly injecting a sperm into ovum is assisted by reproductive technology is called:

- (a) GIFT**
- (b) ZIFT**
- (c) ICSI**
- (d) ET**

Ans. (c) ICSI

Explanation: ICSI stands for Intra Cytoplasmic sperm, Injection.

2. Increased IMR and decreased MMR in a population will:

- (a) Cause rapid increase in growth rate**
- (b) Result in decline in growth rate**
- (c) Not cause significant change in growth rate**
- (d) Result in an explosive population/exp**

Ans. (c) Not cause significant change in growth rate

3. Intensely lactating mothers do not generally conceive due to the:

- (a) Suppression of gonadotropins**
- (b) Hyper secretion of gonadotropins**

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- (c) Suppression of gametic transport**
 - (d) Suppression of fertilization**

Ans. (a) Suppression of gonadotropins

Explanation: (a) Suppression of gonadotropins

4. Sterilisation techniques are generally fool proof methods of contraception with least side effects. Yet, this is the last option for the couples because:

- (i) It is almost irreversible**
- (ii) Of the misconception that it will reduce sexual urge/drive**
- (iii) It is a surgical procedure**
- (iv) Of lack of sufficient facilities in many parts of the country**

Choose the correct option:

- (a) (i) and (iii)**
- (b) (ii) and (iii)**
- (c) (ii) and (iv)**
- (d) (i), (ii), (iii) and (iv)**

Ans. (d) (i), (ii), (iii) and (iv)

Explanation: (d) (i), (ii), (iii) and (iv)

5. A national level approach to build up a reproductively healthy society was taken up in our country in:

- (a) 1950s**
- (b) 1960s**
- (c) 1980s**
- (d) 1990s**

Ans. (a) 1950s

Explanation: (a) 1950s

6. Emergency contraceptives are effective if used within:

-
- (a) 72 hrs of coitus**
 - (b) 72 hrs of ovulation**
 - (c) 72 hrs of menstruation**
 - (d) 72 hrs of implantation**

Ans. (a) 72 hrs of coitus

Explanation: (a) 72 hrs of coitus

7. Choose the right one among the statements given below:

- (a) IUDs are generally inserted by the user herself**
- (b) IUDs increase phagocytosis reaction in the uterus**
- (c) IUDs suppress gametogenesis**
- (d) IUDs once inserted need not be replaced**

Ans. (b) IUDs increase phagocytosis reaction in the uterus

Explanation: A qualified medical professional is needed to insert IUD. IUD has no effect on gametogenesis because ovulation takes place in the ovary while IUD is placed at the junction of fallopian tubes and uterus. IUDs can be easily taken out. So, option 'b' is correct.

8. Following statements are given regarding MTP. Choose the correct options given below:

- (i) MTPs are generally advised during first trimester**
 - (ii) MTPs are used as a contraceptive method**
 - (iii) MTPs are always surgical**
 - (iv) MTPs require the assistance of qualified medical personnel**
- (a) (ii) and (iii)**
 - (b) (ii) and (iii)**
 - (c) (i) and (iv)**
 - (d) (i) and (ii)**

Ans. (c) (i) and (iv)

Explanation: MTP is carried out after conception and hence it cannot be a contraceptive method. MTP involves curettage of foetus by inserting a suitable tool in the uterus and this does not involve surgery. Hence, option (i) and (iv) are correct.

9. From the sexually transmitted diseases mentioned below, identify the one which does not specifically affect the sex organs:

- (a) Syphilis
- (b) AIDS
- (c) Gonorrhea
- (d) Genital warts

Ans. (b) AIDS

Explanation: AIDS can be transmitted through sexual contact but it does not affect the reproductive system. It affects the immune system.

10. Condoms are one of the most popular contraceptives because of the following reasons:

- (a) These are effective barriers for insemination
- (b) They do not interfere with coital act
- (c) These help in reducing the risk of STDs
- (d) All of the above

Ans. (d) All of the above

Explanation: (d) All of the above

11. Choose the correct statement regarding the ZIFT procedure:

- (a) Ova collected from a female donor are transferred to the fallopian tube to facilitate zygote formation.
- (b) Zygote is collected from a female donor and transferred to the fallopian tube
- (c) Zygote is collected from a female donor and transferred to the uterus
- (d) Ova collected from a female donor and transferred to the uterus

Ans. (b) Zygote is collected from a female donor and transferred to the fallopian tube

Explanation: ZIFT stands for Zygote Intra Fallopian Transfer. The name shows that zygote is transferred to the fallopian tube. Transfer to the uterus will be useless because zygote needs to develop into blastocyst for implantation.

12. The correct surgical procedure as a contraceptive method is:

- (a) Ovariectomy**
- (b) Hysterectomy**
- (c) Vasectomy**
- (d) Castration**

Ans. (c) Vasectomy

Explanation: Ovariectomy is removal of ovary which is carried out in case of ovarian cyst or cancer. Hysterectomy is removal of uterus which is carried out in case of uterine cancer or risk of uterine cancer. Castration is done in males (usually in animals).

13. Diaphragms are contraceptive devices used by the females. Choose the correct option from the statements given below:

- (i) They are introduced into the uterus**
- (ii) They are placed to cover the cervical region**
- (iii) They act as physical barriers for sperm entry**
- (iv) They act as spermicidal agents**

- (a) (i) and (ii),**
- (b) (i) and (iii),**
- (c) (ii) and (iii),**
- (d) (iii) & (iv)**

Ans. (c) (ii) and (iii)

Explanation: Diaphragms are made of rubber and rubber has no spermicidal property. Diaphragm is placed over cervix and not into the uterus. Hence, (ii) and (iii) are correct.

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Very Short Answer Type Questions

1. Reproductive health refers only to healthy reproductive functions. Comment.

Ans. This statement is not correct, because reproductive health not only refers to healthy reproductive function but also to other aspects of reproduction; like emotional, social and behavioural.

2. Comment on the Reproductive and Child Health Care programme of the government to improve the reproductive health of the people.

Ans. Reproductive and Child Health Care Programme tries to address all the aspects of reproductive health. This programme focuses on proper care of child and the mother. It also promotes proper use of contraceptives so that family size can be planned and can be limited. This programme has been continuous since many decades and has borne good results.

3. The present population growth rate in India is alarming. Suggest ways to check it.

Ans. Some of the ways to check the population growth in India are as follows:

- Increasing public awareness about the benefits of small family.
 - Improving child care and mother care.
 - Improving access to various contraceptive methods for the masses.
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4. STDs can be considered as self-invited diseases. Comment.

Ans. STDs are communicable diseases; which means these diseases can spread from one person to another. All the STDs happen because of lack of precaution during coitus. If sufficient precautions are taken, then STDs can be avoided. Hence, it can be said that STDs

are self-invited diseases.

5. Suggest the reproduction-related aspects in which counselling should be provided at the school level.

Ans. Reproduction-related aspects in which counseling should be provided at the school level are as follows:

- (a) Physical and psychological changes at puberty.
 - (b) Misconceptions about reproductive system.
 - (c) STDs
 - (d) Reproductive health
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6. Mention the primary aim of the “Assisted Reproductive Technology” (ART) programme.

Ans. The primary aim of the “Assisted Reproductive Technology” (ART) programme is to help childless couples in becoming parents through certain special techniques.

7. What is the significance of progesterone-estrogen combination as a contraceptive measure?

Ans. Significance of progesterone-estrogen combination as a contraceptive pill are as follows:

- (a) They are convenient as they need to be taken orally.
 - (b) They have least side effects and hence are user-friendly.
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8. Strict conditions are to be followed in medical termination of pregnancy (MTP) procedures. Mention two reasons.

Ans. Two reasons for need of strict conditions in MTP are as follows:

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- Many people resort to MTP for female foeticide.
 - It may result in serious consequences for the woman if performed at the wrong trimester of pregnancy.
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9. Males in whom testes fail to descend to the scrotum are generally infertile. Why?

Ans. For optimum sperm production, the temperature of testis should be lower than the body temperature. If testes fail to descend to scrotum then the temperature of testis would be same as that of body temperature. Due to this, males in whom testes fail to descend to scrotum are generally infertile.

10. Mention two advantages of lactational amenorrhea as a contraceptive method.

Ans. Two advantages of lactational amenorrhea as a contraceptive method are as follows:

- (a) It has no side effect.
- (b) It does not hamper in regular sexual activity.

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Short Answer Type Questions

1. Suggest some important steps that you would recommend to be taken to improve the reproductive health standards in India.

Ans. Some steps which should be followed to improve the reproductive health standards in India are as follows:

- Proper education of girls and boys right from the school level to make them aware about reproduction-related aspects.
- Prevention of child marriage.
- Prevention of female foeticide.
- Strict regulation and monitoring of MTP.
- Free distribution of contraceptives for poor people.
- Good network of healthcare workers up to small villages.

2. The procedure of GIFT involves the transfer of female gamete to the fallopian tube. Can gametes be transferred to the uterus to achieve the same result? Explain.

Ans. Transfer of gametes of the uterus will not give the same result. To understand this, we need to recall the process from insemination to implantation. This happens in following stages:

- After ovulation, ovum enters the fallopian tube.
- Sperm needs to reach the ampulla in order to fertilise the egg. Fertilisation cannot happen inside the uterus.
- After fertilization, zygote undergoes several rounds of mitosis to produce blastocyst.
- All these developments take place inside the ampulla and isthmus of the fallopian tube.

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- Blastocyst then goes to the uterus where implantation takes place.

Hence, GIFT involves transfer of female gamete to the fallopian tube rather than to the uterus.

3. Copper ions-releasing IUDs are more efficient than non-medicated methods. Why?

Ans. IUDs induce phagocytosis of sperms and thus prevent conception. Non-medicated IUDs; like Lippes loop; work on this concept. However, copper ions-releasing IUDs give some add on benefits apart from the normal effect of IUDs. Copper ions suppress sperm motility. Thus, sperms are unable to reach the fallopian tube. In case of non-medicated IUDs, some sperms may be able to reach the fallopian tube and failure rate of IUDs can increase. Hence, copper ions-releasing IUDs are more efficient than non-medicated methods.

4. What are the probable factors that contributed to population explosion in India?

Ans. Many factors have contributed to population explosion in India. Some of the them are as follows:

(a) Prevalence of underage marriage.

(b) Having children is considered a necessary obligation from religious and social perspective. A childless couple often has to face the social stigma.

(c) Illiteracy and lack of awareness was a major factor in big size of families.

(d) Better food production and improvements in healthcare facilities helped in reducing IMR and MMR right from the 1950s.

(e) More children are seen as asset because they could contribute in the farm work and other economic activities.

5. Briefly explain IVF and ET What are the conditions in which these methods are advised?

Ans. IVF stands for in-vitro fertilization. In this technique, sperm from the male (or donor) and ovum from the female (or donor) are taken out. Ovum is then fertilized in the

laboratory; usually in a petri dish. ET stands for embryo transfer and is the next procedure after IVF. Embryo up to 8 blastomere stage is transferred in the fallopian tube. Embryo with more than 8 blastomeres is transferred to the uterus. Since, the technique involves carrying out fertilization and some development of zygote in the laboratory hence babies born out of this method are often called test tube babies. These methods are parts of Assisted Reproductive Technologies (ART). These methods are employed when medical treatment and psychotherapy may have failed in helping the couple in conception. These methods require very high degree of precision and can only be carried out by highly specialized doctors. Moreover, employing these technologies require costly equipments. Hence, facilities for IVF or ET are available only at select centres across the country.

6. What are the advantages of natural methods of contraception over artificial methods?

Ans. Following are some of the advantages of natural methods of contraception over artificial methods:

- They are cost effective.
 - They do not have side effects.
 - They do not disturb the normal sexual life of the couple.
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7. What are the conditions in which medical termination of pregnancy is advised?

Ans. Medical termination of pregnancy (MTP) can be advised under following conditions if:

- (a) there is risk to the pregnant lady or to the foetus.
 - (b) foetus has some teratogenic defects.
 - (c) it is a case of unwanted pregnancy which may be because of unsafe coitus.
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8. Comment on the essential features required for an ideal contraceptive.

Ans. An ideal contraceptive should have following features:

- (a) It should be cost effective.

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- (b) It should be easier to use.
 - (c) It should have no side effect.
 - (d) It should not interfere in normal sexual activity.
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9. All reproductive tract infections RTIs are STDs, but all STDs are not RTIs. Justify with example.

Ans. All Reproductive Tract Infections (RTIs) can be transmitted through coitus and hence all RTIs are STDs. But some STDs may not affect the reproductive system at all, e.g. AIDS and Hepatitis B. Hence, all STDs need not be RTIs.

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Long Answer Type Questions

1. What are the Assisted Reproductive Techniques practised to help infertile couples? Describe any three techniques.

Ans. Following are the various Assisted Reproductive Techniques:

(a) **IVF (In-vitro Fertilisation):** In this technique, sperm from the male and ovum and from the female are taken out. They are then allowed to undergo fertilization in the laboratory.

(b) **ET (Embryo Transfer):** This technique is the next step after IVF. There are two ways of doing the embryo transfer. Zygote which are up to 8 blastomeres are transferred to the fallopian tube and this technique is called ZIFT (Zygote Intra Fallopian Transfer). Another technique involves transferring blastocyst into the uterus and this is called Intra Uterine Transfer (IUT).

(c) **GIFT (Gamete Intra Fallopian Transfer):** This technique involves transfer of an ovum collected from a donor into the fallopian tube of another female who cannot produce one.

(d) **ICSI (Intra Cytoplasmic Sperm Injection):** This is a highly-specialized technique. In this technique, sperm is directly injected into the ovum; in laboratory.

(e) **AI (Artificial Insemination):** In this technique, the semen collected either from the husband or a healthy donor is artificially introduced either into the vagina or into uterus of the female.

2. Discuss the mode of action and advantages/disadvantages of hormonal contraceptives.

Ans. Mode of Action of Hormonal Contraceptives: These contraceptives prevent ovulation and implantation. They also alter the quality of cervical mucus which suppresses the entry of

sperms into the uterus.

Advantages: These are convenient because most of them are available as oral pills. They do not disturb the normal sexual activity of the couple. They have less side effects.

Disadvantages: Some long-term side effects are associated with hormonal contraceptives. These may result in increased cholesterol level and may cause obesity. They can also alter the menstrual cycle in some cases. Other side-effects include nausea, abdominal pain, breakthrough bleeding, irregular menstrual bleeding or even breast cancer, though not very significant, should not be totally ignored.

3. STDs are a threat to reproductive health. Describe any two such diseases and suggest preventive measures.

Ans. Trichomoniasis: This happens because of a protozoon named *Trichomonas vaginalis*. The symptoms of this disease include whitish discharge from vagina, constant itching in the genitalia and foul smell. While females suffer from this disease, male is the carrier of the parasite. So, both partners should be treated with suitable medication.

Prevention of trichomoniasis: This disease can be prevented by maintaining good hygiene especially during menstruation. Using barrier method of contraceptive during coitus.

AIDS: Acquired Immunodeficiency Syndrome is a sexually transmitted disease but it affects the immune system. Till date, no cure for this disease has been found. This disease progresses to certain death.

Prevention of AIDS: Following are various means to prevent AIDS:

- (a) Avoiding sexual contact with unknown/multiple partners.
 - (b) Use of disposable syringes and needles.
 - (c) Taking proper precaution during blood transfusion.
 - (d) Using barrier method of contraceptive during coitus.
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4. Do you justify the statutory ban on amniocentesis in our country? Give reasons.

Ans. Amniocentesis is a useful technique which can provide clues to any abnormality in the foetus. But this technique is being used for the wrong purpose in our country.

India is a country where male child is most sought after and a female child is often given second class treatment. Many people resort to MTP when they discover that the unborn child is going to be girl. This is termed as female foeticide. The girl child is killed while she is still in the womb. This is cruel practice and is the root of many social evils in our country. The sex ratio is highly skewed throughout the country and is worse with such some states; like Haryana and Punjab. Many boys grow with such a mindset that they have little respect for women. This malaise is evident in rising cases of rapes and dowry deaths. This trend can only be arrested if girls are given better chances of survival and career development. Hence, statutory ban on amniocentesis is fully justifiable in our country. But we also need to change the mindset of the people to ensure equal treatment of girls.

5. Enumerate and describe any five reasons for introducing sex education to school-going children.

Ans. Following are the five reasons for introducing sex education to school-going children.

(a) **Addressing Curiosity of Adolescents:** School going children are of impressionable age. At this age, any wrong information can create long lasting impressions on their mind. This can be highly counter-productive from them as far as reproductive health is concerned.

(b) **Different Aspects of Reproductive Health:** We know that reproductive health does not have physical health as the only aspect. Reproductive health also includes social, behavioural and psychological aspects.

(c) **Preparing Better Adults:** If children are given sex education at the right age, they will learn to understand the importance of right behavior, proper age of marriage and child bearing and of small family size. They will also learn to respect the privacy of other individuals.

(d) **Reducing the Chances of STDs:** Proper awareness about reproductive system can help in reducing the prevalence of STDs. This can also motivate people to give up stigma and go to a doctor at the right time.

(e) **Family Planning:** Proper awareness will help people understand the importance of small family. It will help in controlling the population growth in country.