

# Reproductive Health

## Multiple Choice Questions (MCQs)

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

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

**Ans. (c)** **ICSI** (Intra Cytoplasmic Sperm Injection) is a specialised procedure to form an embryo in the laboratory in which a sperm is directly injected into the ovum placed in a nutrient broth.

**GIFT** (Gamete Intra Fallopian Transfer) is a method to transfer an ovum collected from a donor into the Fallopian tube of another female who cannot produce one, but can provide suitable environment for fertilisation and further development.

**ZIFT** (Zygote Intra Fallopian Transfer) is a method (similar to *in vitro* fertilisation and embryo transfer in which the zygote (early embryo) up to 8 blastomeres is transferred directly into the Fallopian tube.

**ET** (Embryo Transfer) is a method in which the fertilisation is done *in vitro* and the formed zygote is transferred into the uterus of the female who cannot conceive.

**Q. 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)** **IMR** (Infant Mortality Rate) and **MMR** (Maternal Mortality Rate) both are responsible for affecting the growth rate inversely. It means decline in IMR as well as MMR will result in high population growth and *vice-versa*.

Here, if IMR has been increased then it will result in decline in growth rate. While, decreased MMR will cause rapid increase in growth rate.

Therefore, in the above situation, if IMR has been increased and MMR has been decreased in a population, it will not cause any significant change in growth rate.

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

- (a) suppression of gonadotropins
- (b) hypersecretion of gonadotropins
- (c) suppression of gametic transport
- (d) suppression of fertilisation

**💡 Thinking Process**

*The natural methods of birth control work on the principle of avoiding the meeting of ovum and sperm. One of these methods is lactational amenorrhea, that is based on the principle that during the period of lactation after parturition, ovulation does not occur.*

**Ans. (a)** Breast feeding is one of the natural contraceptive methods. It reduces fecundity by affecting the production of certain reproductive hormones. It is known to suppress the production of **Gonadotropin-Releasing Hormone (GRH)** and **Follicle Stimulating Hormone (FSH)**.

The release of these hormones trigger ovulation. Breast feeding also leads to increased level of prolactin, a hormone that inhibits ovulation. So, even when a woman ovulates, her likelihood of conceiving is low if she is breast-feeding.

**Q. 4** Sterilisation techniques are generally full 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. (a)** Surgical methods/sterilisation techniques are generally opted by the male/female partner as a terminal method to prevent any more pregnancies. This method blocks gamete transport and thereby prevent conception.

In males, this is called vasectomy, while in females, this is called tubectomy. It is a surgical and permanent contraceptive method.

**Q. 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)** India was amongst the first countries in the world to initiate action plans and programmes at a national level to attain total reproductive health as a social goal. These programmes called 'family planning' were initiated in 1951 and were periodically assessed over the past decades.

Creating awareness among people about various reproduction related aspects and providing facilities and support for building up a reproductively healthy society are the major tasks under these programmes.

**Q. 6** Emergency contraceptives are effective if used within 72 hrs of

- (a) coitus                      (b) ovulation                      (c) menstruation                      (d) implantation

💡 **Thinking Process**

*Progestogens alone or in combination with estrogen can also be used as contraceptive method by females in the form of tablets (pills).*

**Ans. (a)** Administration of higher doses progestogens or progestogen-estrogen combinations within 72 hrs of coitus have been found to be very effective as emergency contraceptives as they could be used to avoid possible pregnancy due to rape or casual unprotected intercourse. These drugs delay/disrupt the ovulation and fertilisation.

**Q. 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)** Non-mediated IUDs increase phagocytosis of sperms within the uterus and the Cu ions released suppress sperm motility and the fertilising capacity of sperms. Hormone releasing IUDs make the uterus unsuitable for implantation and the cervix hostile to sperms, e.g., progestasert, LNG-20.

Intra Uterine Devices (IUDs) are used as one of the effective and popular contraceptive method. These devices are inserted by doctors or expert nurses in the uterus through vagina. IUDs are presently available as the non-mediated IUDs (e.g., Lipens loop), copper releasing IUDs (Cu-T, Cu-7, Multiload 375) and the hormone releasing IUDs (Progestasert, LNG-20).

IUDs do not suppress gametogenesis as gametogenesis (oogenesis) takes place in the ovary, while IUDs are inserted in the uterus (through vagina) with the help of an doctor or an expert personnel.

**Q. 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

💡 **Thinking Process**

*MTP (Medical Termination of Pregnancy) is intentional or voluntary termination of pregnancy before full term. It is also known as induced abortion.*

**Ans. (c)** MTP is considered relatively safe during the first trimester, i.e., up to 12 weeks of pregnancy. Second trimester abortions are much more riskier.

MTP is done to get rid of unwanted pregnancies either due to casual unprotected intercourse or failure of the contraceptive used during coitus or rapes. MTPs are also essential in certain cases where continuation of the pregnancy could be harmful or even fatal either to the mother or to the foetus or both.

MTPs are not always surgical. Certain pills also act as abortants. They function by inducing menstruation which checks the implantation of the zygote or detaches the implanted foetus.

In India, majority of the MTPs are performed illegally by unqualified quacks. These are unsafe and may result in the death of mother. So, MTPs should be done only in the presence of qualified medical personnel.

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

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

**Ans. (b)** Syphilis, gonorrhoea and genital warts as STD caused by *Treponema pallidum*, *Neisseria gonorrhoeae* and human papilloma virus. These pathogens directly infect and damage sex organs causing itching fluid discharge, slight pain and swelling of genitalia.

**AIDS** (Acquired Immuno Deficiency Syndrome) is a set of symptoms caused by HIV virus in humans. It is transmitted through sexual contacts from infected to healthy person. The HIV virus does not directly affect sex organs as such but produce other set of symptoms in the body of infected person.

**Q. 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)** Condoms are barriers made of thin rubber/latex sheath used to cover the penis in the male or vagina and cervix in females. It prevents the deposition of ejaculated semen into the vagina of the female.

Condom should be discarded after a single use. It is also a safe guard against transmission of AIDS and other Sexually Transmitted Diseases (STDs).

Condom should be used regularly and put on before starting coital activity, otherwise sperm containing lubricating fluid may be left in the vagina. They do not interfere with coital act.

**Q. 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)** The zygote or early embryo with upto 8 blastomeres is collected from a female donor and transferred into the Fallopian tube, this process is called Zygote Intra Fallopian Transfer or ZIFT.

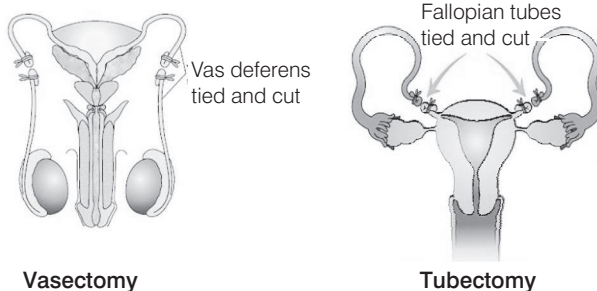
Embryo more than 8 blastomeres is transferred into the uterus by the process called Intra Uterine Transfer or IUT.

When ovum is collected from donor and transferred to Fallopian tube of other female who can not produce ovum- this is known as Gamete Intra Fallopian Transfer (GIFT)

**Q. 12** The correct surgical procedure as a contraceptive method is

- (a) ovariectomy
- (b) hysterectomy
- (c) vasectomy
- (d) castration

**Ans. (c)** Surgical methods, also called sterilisation are terminal and permanent methods which block the transport of gametes, thereby preventing conception. In males, this is called vasectomy, while in females, this is called tubectomy.



**Q. 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 and IV

**Ans. (c)** Diaphragms, cervical caps and vaults are the barriers made of rubber that are inserted into the female reproductive tract to cover the cervix during coitus. They prevent the entry of sperms through cervix.

Spermicidal agents like creams, jellies and foams are used along with these barriers to increase their contraceptive efficiency.

## Very Short Answer Type Questions

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

**Ans.** According to the World Health Organisation (WHO), reproductive health means a total well-being in all aspects of reproduction, i.e., physical emotional, behavioural and social. Therefore, a society with people having physically and functionally normal reproductive organs and normal emotional and behavioural interactions among them in all sex-related aspects might be called reproductively healthy.

**Q. 2** Comment on the reproductive and child healthcare programme of the government to improve the reproductive health of the people.

**Ans.** India was amongst the first countries in the world to initiate action plans and programmes at a national level to attain total reproductive health as a social goal.

These programmes called 'family planning' were initiated in 1951 and were periodically assessed over the past decades. Improved programmes covering wider reproduction-related areas are currently in operation under the popular name 'Reproductive and Child Healthcare (RCH) programmes'.

Creating awareness among people about various reproduction related aspects and providing facilities and support for building up a reproductively healthy society are the major tasks under these programmes.

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

**Ans.** The present population growth rate in India is alarming. Such an alarming growth rate could lead to an absolute scarcity of even the basic requirements, *i.e.*, food, shelter and clothing, in spite of significant progress made in those areas.

*Following are some important ways to overcome this problem*

- (i) By raising marriageable age of the female to 18 years and that of males to 21 years.
- (ii) By promoting use of birth control measures to motivate smaller families.
- (iii) By providing incentives to couples with small families.
- (iv) By educating people about consequences of uncontrolled population growth.

**Q. 4** STDs can be considered as self-invited diseases. Comment.

**Ans.** Diseases or infections which are transmitted through sexual intercourse are collectively called Sexually Transmitted Diseases (STD) or Venereal Diseases (VD) or Reproductive Tract Infections (RTI).

Though all persons are vulnerable to these infections, their incidences are reported to be very high among persons in the age group of 15-24 years. STDs can be considered as self-invited diseases because one could be free of these infections by following the simple principles given below

- (i) Avoid sex with unknown partners/multiple partners.
- (ii) Always use condoms during coitus.
- (iii) In case of doubt, one should go to a qualified doctor for early detection and get complete treatment if diagnosed with disease.

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

**Ans.** *In following aspects counselling should be provided at the school level*

- (i) Introduction of sex education in school that helps in eradicating myths and misconceptions regarding sex-related aspects.
- (ii) Proper information about reproductive organs, safe and hygienic sexual practices and Sexually Transmitted Diseases (STDs).
- (iii) Awareness of problems due to uncontrolled population growth, social evils like sex-abuse and sex-related crimes, etc.
- (iv) Educating people about available birth control options, care of pregnant mothers, post-natal care of mother and child, importance of breast-feeding, equal opportunities for the male and female child.

**Q. 6** Mention the primary aim of the 'Assisted Reproductive Technology' (ART) programme.

**Ans.** 'Assisted Reproductive Technology' (ART) is the collection of certain special techniques. The primary aim of the ART programme is to assist infertile couples to have children through certain special techniques (like ZIFT, IUT, GIFT, ICSI, AI, etc.) where corrective treatment is not possible.

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

**Ans.** Progestogens or progestogen-estrogen combinations play an important role in contraception. They are used in the form of tablets or pills. They inhibit ovulation and hence implantation.

They are also used by females as injections or implants under the skin. Their mode of action is similar to that of pills but their effective periods are longer.

**Q. 8** Strict conditions are to be followed in Medical Termination of Pregnancy (MTP) procedures. Mention two reasons.

**Ans.** *Strict conditions are to be followed in Medical Termination of Pregnancy (MTP) procedures due to following two reasons*

(a) to get rid of unwanted pregnancies.

(b) it is also essential when the foetus is suffering from an incurable disease or when continuation of the pregnancy could be harmful or even fatal to the mother and or foetus.

**Q. 9** Males in whom testes fail to descend to the scrotum are generally infertile. Why?

**Ans.** Since, the testes are very sensitive to temperature, if they do not descend into the scrotum prior to adolescence, then they will stop producing sperms that will lead to infertility in males.

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

**Ans.** *The two advantages of lactational amenorrhea as a contraceptive method are mentioned as below*

(i) If the mother is breast feeding completely, she would not ovulate, so chances of conception would be low.

(ii) She would not need to use any pill or devices for birth control. So, there will be no side effects.

## Short Answer Type Questions

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

**💡 Thinking Process**

*Reproductive health means total well being in all aspects of reproduction, i.e., physical, emotional, behavioural, social and physical.*

**Ans.** Following measures are needed to be taken to improve the reproductive health standards in India

- (i) Providing infrastructural facilities and professional expertise to attain reproductive health.
- (ii) Educating people about birth control methods, care of pregnant mothers, importance of breast feeding, safe and hygienic sexual practices and safeguard against STDs.
- (iii) Introduction of sex education in schools to give proper information to the young minds about sex-related aspects.
- (iv) Help of audio-visual and print media to create awareness among people about reproduction related aspects.
- (v) Awareness of problems due to population explosion, social evils like sex-abuse and sex-related crimes.
- (vi) Statutory ban on amniocentesis to legally check female foeticides.

**Q. 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.** The procedure of GIFT involves the transfer of female gamete to the Fallopian tube. Gametes cannot be transferred to the uterus to achieve the same result because the uterine environment is not congenial for the survival of the gamete.

If directly transferred to the uterus they will undergo degeneration or could be phagocytosed and hence, viable zygote would not be formed.

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

**Ans.** Intra Uterine Devices (IUDs) are inserted in the uterus through vagina and are presently available as the non-medicated IUDs, copper releasing IUDs and hormone releasing IUDs. *Cu ions-releasing IUDs are more efficient methods because*

- (i) Cu ions released suppress sperm motility and fertilising capacity of sperms.
- (ii) It increases phagocytosis of sperms within the uterus.
- (iii) It is one of the safest, most effective, convenient and least expensive reversible contraceptives available.
- (iv) It has no systemic effects and can be safely used by breast-feeding women.

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

**Ans.** *Following are some factors that have probably contributed to population explosion in India*

- (i) Ignorance and complete lack of awareness about the ill effects of increasing population especially in rural regions.
- (ii) Poverty and illiteracy
- (iii) Social stigmas about girl child and desire to have boy child.
- (iv) Decline in death rate.
- (v) Decline in maternal and infant mortality rate.
- (vi) Increase in the young, reproductive age population.

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

**Ans.** IVF refers to *in vitro* fertilisation and ET refers to embryo transfer. Gametes from the male and female are collected hygienically and induced to fuse in the laboratory set up under simulated conditions.

The zygote formed is collected and is introduced into the uterus of a host or surrogate mother at an appropriate time (secretory phase). Early embryos (up to 8 cell) are generally transferred to the Fallopian tube whereas embryos with more than 8 cells are transferred to the uterus.

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

**💡 Thinking Process**

*Natural methods of contraception work on the principle of avoiding chances of ovum and sperm meeting.*

**Ans.** As no medicines or devices are used in these methods, side effects are almost nil.

**Note** *Chances of failure of these methods are also high.*

**Q. 7** What are the conditions in which medical termination of pregnancy is advised?

**Ans.** Medical termination of pregnancy is carried out to get rid of unwanted pregnancies. It is also essential when the foetus is suffering from an incurable disease or when continuation of the pregnancy could be harmful or even fatal to the mother and/or foetus.

**Q. 8** Comment on the essential features required for an ideal contraceptive.

**Ans.** *An ideal contraceptive should*

- (i) be easily available
- (ii) effective and reversible with least or no side effects
- (iii) no interference with the sexual drive/desire or the sexual act of the user
- (iv) be user-friendly

**Q. 9** All reproductive tract infections RTIs are STDs, but all STDs are not RTIs. Justify with example.

**Ans.** Among the common STDs, hepatitis-B and AIDS are not infections of the reproductive organs though their mode of transmission could be through sexual contact also.

All other diseases like gonorrhoea, syphilis, genital herpes, hepatitis-B are transmitted through sexual contact and are also infections of the reproductive tract so, there are STDs and RTI. Whereas, AIDS and hepatitis are STDs but not RTI.

## Long Answer Type Questions

**Q. 1** What are the assisted reproductive techniques practised to help infertile couples? Describe any three techniques.

### 💡 Thinking Process

*The infertile couples could be assisted to have children through certain special techniques called Assisted Reproductive Technologies (ART).*

**Ans.** ART techniques are described as follows

- (i) **Test-tube Baby Programmes** In this method, ova from the wife/donor (female) and the sperms from the husband/donor (male) are collected and are induced to form zygote under simulated conditions in the laboratory. This process is called *In Vitro* Fertilisation (IVF).

The zygote or early embryo with upto 8 blastomeres is transferred into the Fallopian tube (process is called Zygote Intra Fallopian Transfer or ZIFT) and embryo with more than 8 blastomeres is transferred into the uterus (process is called Intra Uterine Transfer or IUT).

In females who cannot conceive, embryos formed by fusion of gametes within the female (called *in vivo* fertilisation) are transferred.

- (ii) **Gamete Intra Fallopian Transfer (GIFT)** It is the transfer of an ovum collected from a donor into the Fallopian tube of another female who cannot produce one, but can provide suitable environment for fertilisation and further development of the embryo.

- (iii) **Artificial Insemination (AI)** In this method, the semen collected either from the husband or a healthy donor is artificially introduced into the vagina or into the uterus (Intra Uterine Insemination or IUI).

This technique is used in cases where the male is unable to inseminate sperms in the female reproductive tract or due to very low sperm counts in the ejaculation.

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

### 💡 Thinking Process

*Intra Uterine Devices (IUDs) are effective and popular method of contraception.*

**Ans.** Intra Uterine Devices are presently available as

- (a) Non-medicated IUDs (e.g., Lippes loop).
- (b) Copper releasing IUDs (e.g., Cu-T, Cu-7, Multiload 375).
- (c) Hormone releasing IUDs (e.g., Progestasert, LNG-20).

### **Mode of Action of Hormonal Contraceptives**

The hormones releasing IUDs, make the uterus unsuitable for implantation and the cervix hostile to the sperms. Progesterone can also be used as injections and implants (slow release of hormones) to inhibit ovulation.

### **Advantages of Hormonal Contraceptives**

Administration of progestogens or progestogen-oestrogen combinations or IUDs within 72 hrs of intercourse have been found to be effective as emergency contraceptives as they could be used to avoid possible pregnancy due to rape or causal unprotected intercourse.

### **Disadvantages of Hormonal Contraceptives**

- (i) IUDs are suggested as ideal contraceptives for the females but they can have serious side effects.
- (ii) Can cause allergic reaction.
- (iii) If displaced, can cause tissue damage and profuse bleeding.
- (iv) IUDs can damage the normal hormonal balance and later even if desired, pregnancy may not be achieved.
- (v) Artificial intake can disrupt normal hormonal interactions in the body system.

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

**Ans.** Diseases or infections which are transmitted through sexual intercourse are collectively called Sexually Transmitted Diseases (STDs) or Venereal Diseases (VD) or Reproductive Tract Infections (RTI).

Though all persons are vulnerable to these infections, their incidences are reported to be very high among persons in the age group of 15-24 years. STDs can be considered as self-invited diseases.

STDs include gonorrhoea, syphilis, genital herpes, chlamydiasis, genital warts, trichomoniasis, hepatitis-B, HIV. These diseases may cause some complications Pelvic Inflammatory Diseases (PID), abortions, still births, ectopic pregnancies, infertility, or even cancer of the reproductive tract.

*Hepatitis-B and HIV are such diseases that get transmitted by the following ways besides sexual contacts*

- (i) Sharing of injection needles or surgical instruments with infected persons.
- (ii) Transfusion of infected blood.
- (iii) Transfer from infected mother to the foetus through placenta.

### **Preventive Measures**

*By following simple principles, STDs can be prevented*

- (i) Avoid sex with unknown partners/multiple partners.
- (ii) Always use condoms during coitus.
- (iii) Contact a qualified doctor for any doubt in early stage of infection.

**Q. 4** Do you justify the statutory ban on amniocentesis in our country? Give reasons.

**Ans.** Yes, the ban is necessary because amniocentesis is misused now-a-days. It is used to determine the sex of the foetus and in many cases it led to female foeticide. It became so serious that it disturbed the male female ratio that can have a negative impact on society.

The test is actually meant to determine the genetic defects or metabolic disorders in foetus by doing a chromosomal analysis. In such extreme cases that would be incurable, a decision to abort the foetus could be taken.

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

**Ans.** *The reasons for introducing sex education to school-going children are as follows*

- (i) At school level, children from age group 12 and above should be counselled for reproductive system, processes and practices and importance of safe and responsible sex.
- (ii) Sex related issues and problems like adolescence changes, menstrual cycle, menstrual problems, unwanted pregnancy, unsafe abortion, reproductive tract infections (STDs) and cancers.
- (iii) They should know about body changes during their age and taught about healthy habits including personal cleanliness and hygiene.
- (iv) Students should become part of such education, so that they overcome hesitation and gain confidence to discuss any query with their teacher or parents.
- (v) Counselling and awareness regarding reproductive organs, safe and hygienic sexual practices will play an important role to make people reproductively healthy.