Very Short Answer Questions (PYQ)

[1 Mark]

Q.1. Mention any two events that are inhibited by the intake of oral contraceptive pills to prevent pregnancy in humAns.

Ans. Two events that are inhibited by the intake of oral contraceptive pills to prevent pregnancy in humans are ovulation and implantation.

Q.2. Indiscriminate diagnostic practices, using X-rays, etc., should be avoided. Give one reason.

Ans. These practices act as carcinogens which convert normal cells to neoplastic cells by harmful mutations or chromosomal aberration.

Q.3. A mother of one-year old daughter wanted to space her second child. Her doctor suggested CuT. Explain its contraceptive actions.

Ans. CuT increases phagocytosis of sperms within the uterus and the Cu2+ ions released suppress sperm motility and the fertilising capacity of sperms.

Q.4. Why is tubectomy considered a contraceptive method?

Ans. Tubectomy involves cutting a piece of the fallopian tube and tying its ends. This way, the sperms are not able to reach the egg and so fertilisation cannot take place. Thus, it acts as a contraceptive method.

Q.5. Our government has intentionally imposed strict conditions for MTP in our country. Justify giving a reason.

Ans. The Government has imposed strict conditions for MTP to prevent female foeticide, to maintain sex ratio and to avoid any danger for (young) mother and foetus.

Very Short Answer Questions (OIQ)

[1 Mark]

Q.1. Define population explosion.

Ans. The tremendous increase in size and growth rate of population is called population explosion.

Q.2. Government of India has raised the marriageable age of female to 18 years and of males to 21 years. Suggest any two more measures adopted by Government for the purpose.

Ans.

(i) Incentives given to couples with small families.

(ii) Media publicity through posters of happy couples with two children (Hum Do Humare Do).

(iii) Motivatation to promote smaller families by using contraceptive methods.

Q.3. A doctor has observed the chromosomal disorders in developing foetus and advised the couple to undergo abortion. Suggest the technique by which doctor absorbed the chromosomal disorders.

OR

Give the technical terms for foetal sex determination test based on the chromosomal pattern in the amniotic fluid surrounding the developing embryo.

Ans. Amniocentesis

Q.4. Reproductive health refers only to healthy reproductive functions. Comment.

Ans. Reproductive health refers to the total well-being in all aspects of reproduction, i.e., physical, behavioural, psychological and social.

Q.5. The present population growth rate in India is alarming. Suggest ways to check it.

Ans.

(i) By increasing marriageable age.

(ii) By promoting use of birth control measures.

(iii) By educating people about consequences of uncontrolled population growth.

Q.6. Expand MMR and IMR.

Ans.

MMR—Maternal mortality rate

IMR—Infant mortality rate

Q.7. Give two examples of natural methods of contraceptions.

Ans.

(i) Periodic abstinence, and

(ii) coitus interruptus.

Q.8. What general term is given to the method in which the male partner withdraws his penis from the vagina just before ejaculation so as to avoid insemination?

Ans. Coitus interruptus

Q.9. What are the commonly used barrier methods of contraception?

Ans. Condoms, diaphragms, cervical caps and vaults are the commonly used barrier methods of contraception.

Q.10. A newly married couple does not want to produce children at least for one year and also not to use any contraceptives. Suggest a method to prevent pregnancy.

Ans. Periodic abstinence or coitus interruptus

Q.11. Bring out one main difference between CuT and LNG-20.

Ans. CuT is copper releasing IUDs and LNG-20 is hormone releasing IUDs. Cu2+ ions released suppress sperm motility and thus the fertilising capacity of sperms decreases. While the hormone releasing IUDs make the uterus unsuitable for implantation and the cervix hostile to the sperms.

Q.12. Why do intensely lactating mothers not generally conceive?

Ans. Due to suppression of gonadotropins, ovulation and menstrual cycle do not take place in lactating mothers. So they do not generally conceive.

Q.13. How can pregnancy due to unprotected sex be prevented?

Ans. Progestogen–estrogen combination and IUDs administered within 72 hours of intercourse can prevent pregnancy.

Q.14. Name the surgical methods of contraceptions.

Ans. Vasectomy in males and tubectomy in females.

Q.15. What is sterilisation?

Ans. It is a surgical method to block gamete transport and thereby prevent conception.

Q.16. Name the causative agent of AIDS.

Ans. Human immunodeficiency virus (HIV) is the causative agent of AIDS.

Q.17. Name two sexually transmitted diseases caused by bacteria.

Ans. Syphilis and gonorrhoea.

Q.18. Expand IUD and MTP

Ans. IUD—Intra uterine device

MTP—Medical termination of pregnancy

Q.19. What is meant by artificial insemination?

Ans. It is a technique by which semen collected from the husband or a healthy donor is artificially introduced either into the vagina or into the uterus of the female.

Q.20. Mention early symptoms of STDs.

Ans. Early symptoms of STDs include itching, fluid discharge, slight pain and swellings in the genital region.

Q.21. Expand ZIFT and RTI.

Ans. ZIFT—Zygote intra fallopian transfer

RTI—Reproductive tract infection

Q.22. At what stage zygote can be introduced in the fallopian tube in Zygote Intra Fallopian Transfer (ZIFT)?

Ans. 8-celled stage

Q.23. A woman's husband is infertile. So, the lady has decided to have baby by taking sperms from sperm bank. Which technique will you suggest for her pregnancy?

Ans. Intra cytoplasmic sperm injection (ICSI)

Q.24. What technique would you suggest for correcting infertility caused due to very low sperm counts of a male partner?

Ans. Artificial insemination

Q.25. In case of an infertile couple, the male partner can inseminate normally but the mobility of sperms is below 40 per cent. Judge, which kind of ART is suited in this situation to form an embryo in the laboratory, without involving a donor?

Ans. Intra Cytoplasmic Sperm Injection.

Short Answer Questions-I (PY)

[2 Marks]

Q.1. At the time of Independence, the population of India was 350 million, which exploded to over 1 billion by May 2000. List any two reasons for this rise in population and any two steps taken by the government to check this population explosion.

Ans. Two reasons for increase in population are:

(i) A rapid decline in death rate, maternal mortality rate and infant mortality rate.

(ii) Increase in number of people in reproducible age.

Two steps for checking population explosion:

(i) Statutory raising of marriageable age of the female to 18 years and male to 21 years.

(ii) Incentives given to couples with small families.

Q.2. What is amniocentesis? Why has the government imposed a statutory ban in spite of its importance in the medical field?

Ans. Amniocentesis is a foetal sex determination test based on the chromosomal pattern in cells extracted from the amniotic fluid, surrounding the developing embryo. Amniocentesis is used for sex determination, which most people go for, to kill female foetus. Therefore, it has been banned.

Q.3. Describe the lactational amenorrhea method of birth control.

Ans. Lactational amenorrhea is based on the principle that during the period of intense lactation after parturition, menstrual cycle or ovulation does not occur.

Q.4. Name an oral pill used as a contraceptive by human females. Explain how does it prevent pregnancy.

Ans. 'Saheli' is an oral pill used as a contraceptive by females. Oral pills inhibit ovulation and implantation, as well as, alter the quality of cervical mucus to prevent or retard entry of sperms. Thus, fertilisation and further pregnancy is prevented.

Q.5. Why is 'Saheli' considered to be an improved form of oral contraceptive for human female?

Ans. "Saheli" contains a non-steroidal preparation and is a once-a-week pill, with high contraceptive value and very less side-effects. Therefore, it is considered an improved form of contraceptive pills.

Q.6. Why is CuT considered a good contraceptive device to space children?

Ans. CuT is an ideal contraceptive device for human females because

(i) Cu^{2+} ions released suppress sperm motility and fertilising capacity of sperms.

(ii) It increases phagocytosis of sperms within the uterus.

Q.7. How do copper and hormone releasing IUDs act as contraceptives? Explain.

Ans.

***** The copper releasing IUDs release Cu ions, which suppress sperm motility and the fertilising capacity of sperms.

***** The hormone releasing IUDs make the uterus unsuitable for implantation and the cervix hostile to the sperms.

Q.8. A couple where both husband and wife are producing functional gametes, but the wife is still unable to conceive, is seeking medical aid. Describe any one method that you can suggest to this couple to become happy parents.

Ans. Methods: IVF/ZIFT/AI

IVF (In vitro fertilisation): Ova from wife and sperm from the husband is collected. It is induced to formed zygote under simulated laboratory conditions.

Q.9. A childless couple has agreed for a test tube baby programme. List only the basic steps the procedure would involve to conceive the baby.

Ans. The steps involved are:

(i) Extraction of gametes from parents.

(ii) In vitro fertilisation.

(iii) Transfer of zygote (at 8 blastomere stage) into the fallopian tube.

Q.10. An infertile couple is advised to adopt test-tube baby programme. Describe two principle procedures adopted for such technologies.

Ans.

(i) IVF/In vitro fertilisation: It is the fertilisation of gametes outside the body in almost similar conditions as that in the body.

(ii) ET/Embryo transfer: Embryos formed by fusion of gametes is transferred into reproductive tract or uterus.

Q.11. After a brief medical examination a healthy couple came to know that both of them are unable to produce functional gametes and should look for an 'ART' (Assisted Reproductive Technique). Name the 'ART' and the procedure involved that you can suggest to them to help them bear a child.

Ans. Test tube baby programme can be done.

Test Tube Baby Programmes:

(i) In this method, ova from the wife/donor (female) and the sperms from the husband/donor (male) are collected and induced to form zygote under simulated conditions in the laboratory. This process is called in vitro fertilisation (IVF).

(ii) The zygote or early embryo with up to 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).

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

Q.12. Explain how do the following act as contraceptives:

(a) CuT

(b) 'Saheli'

Ans.

(a) Cu2+ ions released suppress sperm motility, lowers the fertilising capacity of sperms.

(b) Inhibit ovulation, implantation, as well as alter the quality of cervical mucus to prevent or retard the entry of sperms.

Short Answer Questions-I (OIQ)

[2 Mark]

Q.1. Comment on the RCH programme of the government to improve the reproductive health of the people.

Ans. The basic aims of the RCH programmes are creating public awareness regarding reproductionrelated aspects and providing facilities to build up a healthy society with added emphasis on the health of mother and child.

Q.2. The alarming population growth is leading to scarcity of basic requirements. Suggest with reason, any two population control measures other than contraception to address the situation.

Ans. Population control measures other than contraception are:

(i) Advertisements in the media, to generate awareness among people about the harms of large population.

(ii) Statutory raising of marriageable age of the female to 18 years and that of males to 21 years, to delay the number of births.

(iii) Incentives given to couples with small families, to motivate others to comply.

Q.3. What does amniocentesis test? On what basis does it work? Is it justified to put a statutory ban on this process? Give reason.

Ans. Amniocentesis – A foetal sex diagnostic test based on the chromosomal pattern in the amniotic fluid surrounding the developing embryo is called amniocentesis.

It is justified to ban the process for diagnosis of sex to legally check the increasing female foeticides.

Q.4. Describe the technique by which genetic disorder in a developing foetus can be detected.

Ans. Amniocentesis is a technique by which genetic disorder in a developing foetus can be detected. This is based on the chromosomal pattern in the cells found in the amniotic fluid surrounding the developing embryo. Amniotic fluid contains cells and molecules shed by the foetus. The chromosomes of foetal cells can also be used to find out the sex of the foetus and abnormalities if any. So, if an abnormality is found, the mother can get the foetus aborted.

Q.5. A couple is eager to know the sex of their unborn child. What diagnostic technique will you suggest? What social abuse is associated with the application of this technique?

Ans. Amniocentesis is the suggested diagnostic technique which when applied helps in sex determination of the foetus and may lead to social abuse like female foeticides.

Q.6. What do you mean by contraception? Name the natural methods of contraception.

Ans. The birth control methods which prevent conception are known as contraception. Natural methods of contraception are periodic abstinence, withdrawal or coitus interruptus and lactational amenorrhea.

Q.7. What are the barrier methods of birth control? Explain.

Ans. Barrier methods

These methods prevent the contact of sperm and ovum with the help of barriers. Such methods are available for both males and females.

(a) 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.

(b) 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.

(c) Spermicidal creams, jellies and foams are used along with these barriers to increase their contraceptive efficiency.

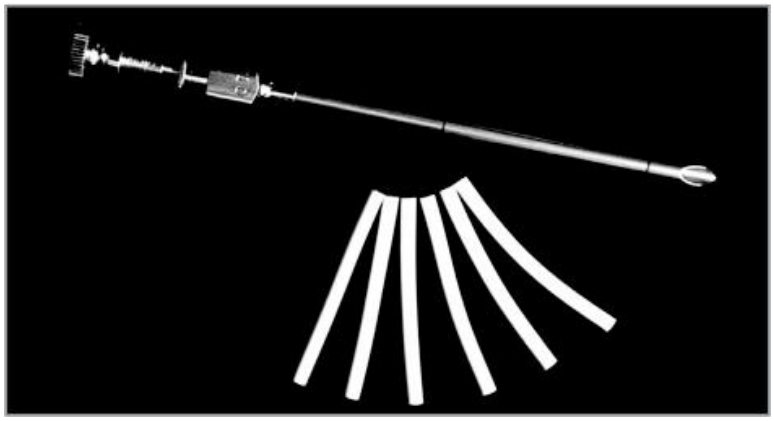
Q.8. Describe the chemical methods of birth control.

Ans. Chemical methods of birth control are as follows:

(i) Spermicidal creams, jellies and foams are introduced in the vagina just before coitus that kill sperms.

(ii) Pills are taken as oral contraceptive that inhibit ovulation and thus implantation.

Q.9. Identify the given diagram. What it is used for?



Ans. The diagram represents implants. These contain progestogens or progestogen-estrogen combination. These are used for inhibiting ovulation and implantation of embryo to the uterine wall.

Q.10. Write the role of hormones in contraception.

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.11. Explain the permanent methods of birth control.

Ans. Sterilisation (surgical methods) is a permanent method of birth control. It is called vasectomy in male and tubectomy in female. In vasectomy, a small part of the vas deferens is removed or tied up through a small incision in the scrotum while in

tubectomy, a small part of the fallopian tube is removed or tied up through a small incision in the abdomen or through vagina. These techniques are highly effective but their reversibility is very poor.

Q.12. How do Intra Uterine Devices (IUDs) act to prevent unwanted pregnancy in human females?

Ans. Intra uterine devices are inserted in the uterus through vagina and are presently available as the non-medicated IUDs, copper releasing IUDs and hormone releasing IUDs. They increase phagocytosis of sperms within the uterus and Cu ions released, suppress sperm mobility, along with fertilising capacity of sperms. On the other hand, hormone releasing IUDs make the uterus unsuitable for implantation and the cervix hostile to sperms.

Q.13. Name the hormonal composition of the oral contraceptive used by human females. Explain how does it act as a contraceptive.

Ans. Oral contraceptive of female consists of either progestogens or progesterone–estrogen combination. They are taken as pills that inhibit ovulation and implantation.

Q.14. How do surgical procedures prevent conception in humans? Mention the way it is achieved in human males.

Ans. Surgical procedures block gamete transport and thereby prevent conception. In human males, sterilisation procedure is called vasectomy, i.e., a small part of the vas deferens is removed or tied up through a small incision on the scrotum.

Q.15. Why is medical termination of pregnancy (MTP) carried out?

Ans. MTP 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.16. 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 gonorrhea, syphilis, genital herpes, are transmitted through sexual contact and are also infections of the reproductive tract.

Q.17. In GIFT, gametes are transferred to the fallopian tube. Can gametes be transferred to the uterus to achieve the same result? Explain.

Ans. 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.18. Why is the term test tube baby a misnomer?

Ans. The term test tube is a misnomer because the baby is not developed in the test tube; only fertilisation is carried out in the laboratory conditions (in vitro). The fertilised egg (zygote) or early embryo is then transferred into the fallopian tube or uterus of the mother where it develops and a normal baby is born.

Q.19. Following table gives certain terms associated with ART. Fill in the spaces a, b, c and d.

IVF and ET	***a***
b	Introduction of zygote/embryo with 8 blastomeres into fallopian tube
c	Introduction of ova of a donor into the fallopian tube
d	Introduction of semen from the husband or healthy donor into the uterus

Ans.

(a) Test tube baby programme

(b) ZIFT (Zygote intra fallopian transfer)

(c) GIFT (Gamete intra fallopian transfer)

(d) IUI (Intra uterine insemination)

Short Answer Questions-II (PYQ)

[3 Marks]

Q.1. If implementation of better techniques and new strategies are required to provide more efficient care and assistance to people, then why is there a statutory ban on amniocentesis? Write the use of this technique and give reason to justify the ban.

Ans. There is a statutory ban on amniocentesis to legally check female foeticide. This sex determination technique has been misused to eliminate girl child before birth.

This technique is also used to detect the abnormal chromosomes or any genetic disorder.

The ban is justified to prevent female foeticide which could lead to change in sex ratio of the population.

Q.2.

(a) Name any two copper releasing IUDs.

(b) Explain how do they act as effective contraceptives in human females.

Ans.

(a) CuT, Cu7, Multiload 375

(b) IUDs function by either of the following mechanism: suppress sperm motility or suppress fertilising capacity of sperms and increase phagocytosis of sperms within uterus.

Q.3. Name two hormones that are constituents of contraceptive pills. Why do they have high and effective contraceptive value? Name a commonly prescribed non-steroidal oral pill.

Ans. Progestogen-estrogen combination, Progestogen or Progesterone are present in contraceptive pills.

They inhibit ovulation, implantation and alter quality of cervical mucus to retard entry of sperm. Saheli is a commonly prescribed oral pill.

Q.4. Suggest and explain any three Assisted Reproductive Technologies (ART) to an infertile couple.

Ans. The infertile couples could be assisted to have children through certain special techniques called **assisted reproductive technologies (ART),** which are given below.

(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 induced to form zygote under simulated conditions in the laboratory. This process is called **in vitro fertilisation (IVF).**

● The zygote or early embryo with up to 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 in another 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) Intra Cytoplasmic Sperm Injection (ICSI)

● It is a procedure to form an embryo in the laboratory by directly injecting the sperm into an ovum.

(iv) 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.5. Explain the zygote intra fallopian transfer technique (ZIFT). How is intra uterine transfer technique (IUT) different from it?

Ans. Zygote intra fallopian transfer technique (ZIFT) is a technique of in vitro fertilisation wherein the zygote or early embryo having up to 8 blastomeres is transferred into the fallopian tube to complete its further development.

Intra uterine transfer (IUT) technique is different from ZIFT as the embryos with more than 8 blastomeres are transferred into the uterus in IUT.

Q.6. How are assisted reproductive technologies helpful to humans? How are ZIFT and GIFT different from intra uterine transfers? Explain.

Ans. The infertile couples could be assisted to have children through certain special techniques known as assisted reproductive technologies (ART).

ZIFT: The zygote or early embryo with up to 8 blastomeres is transferred into the fallopian tube. This is called zygote intra fallopian transfer (ZIFT).

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.

Intra uterine transfer (IUT) refers to the introduction of embryo with more than 8 blastomeres into the uterus of a female to complete its further development.

Q.7. Answer the following questions:

Q. Mention the problems that are taken care of by Reproduction and Child Health Care programme.

Ans. Reproduction and Child Health Care programmes take care of uncontrolled population growth, STDs and social evils like sex abuse and sex related crime.

Q. What is amniocentesis and why there is a statutory ban on it?

Ans. Foetal sex determination tests based on chromosomal pattern in the amniotic fluid to study chromosomal abnormalities in the foetus is called amniocentesis.

It is banned so as to legally check female foeticide.

Q.8. Answer the following questions:

Q. List any four characteristics of an ideal contraceptive.

Ans. The ideal contraceptive should be

(i) user-friendly,

(ii) effective and easily available,

(iii) not interfering with the sexual drive,

(iv) reversible with no or least side effects.

Q. Name two intrauterine contraceptive devices that affect the motility of sperms.

Ans. CuT, Cu7 and Multiload 375 affect motility of sperms.

Q.9. A woman has certain queries as listed below, before starting with contraceptive pills. Answer them.

a. What do contraceptive pills contain and how do they act as contraceptives?

b. What schedule should be followed for taking these pills?

Ans.

a. Contraceptive pills contain progestogen or progestogen-estrogen combination.

They act by either of the following way:

(i) inhibit ovulation

(ii) inhibit implantation

(iii) alter quality of cervical mucus to prevent or retard entry of sperms.

b. Contraceptive pills should be taken daily for a period of 21 days starting within first five days of menstrual cycle (to be repeated after a gap of 7 days).

Short Answer Questions-II (OIQ)

[3 Marks]

Q.1. What are the consequences of population explosion?

Ans. Following are the consequences of population explosion:

(i) It is causing an absolute scarcity of the basic requirements, i.e., food, clothing, fuel and shelter.

(ii) There is greater demand for fossil fuels (oil, gas and coal).

(iii) Eco-degradation.

Q.2. Describe three manners in which fertilisation of human ovum by a sperm can be prevented.

Ans. Fertilisation of human ovum by a sperm can be prevented by the following methods:

(a) Condoms act as barriers made of thin rubber or latex sheath. These are used to cover the penis in the male or vagina and cervix in females.

(b) Diaphragm, cervical caps and vaults are the barriers made of rubber that are introduced in the female reproductive tract to cover cervix.

(c) Spermicidal creams, jellies and foams are introduced in vagina to kill the sperms.

Q.3. How do 'pills' act as contraceptives in human female?

Ans. Pills act in the following ways:

(i) They inhibit ovulation.

(ii) They inhibit implantation.

(iii) They alter the quality of cervical mucus to prevent the entry of sperms.

Q.4. Name three incurable sexually transmitted diseases and their causative organisms.

Ans.

Sexually transmitted disease	Causal agent
1. Hepatitis-B 2. Genital herpes 3. AIDS	Hepatitis-B virus Herpes simplex virus HIV (Human Immunodeficiency Virus)

Q.5.

(a) Expand IUD.

(b) Why is hormone releasing IUD considered a good contraceptive to space children?

Ans.

(a) IUD—Intra uterine devices.

(b) Hormone releasing IUDs are considered a good contraceptive because

(i) they make the uterus unsuitable for implantation.

(ii) they increase the phagocytosis of sperms within uterus and the Cu ions released, suppress sperm motility and the fertilising capacity of sperms.

Q.6. 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 uterine 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.7. Within what age group sexually transmitted diseases (STDs) are reported to be very high. Mention three practices to avoid them.

Ans. In the age group of 15–24 years, STDs are reported to be very high. Following are the three practices to avoid them:

(i) Abstain sexual contact with unknown partners or multiple partners.

(ii) Always use condoms during coitus.

(iii) In case of any doubt, medical help should be taken for early detection.

Q.8. Expand the following and explain any one of them.

Q. IVF

Ans. IVF — In Vitro Fertilisation

Q. ZIFT

Ans. ZIFT — Zygote Intra Fallopian Transfer

Q. IUI

Ans. IUI — Intra-Uterine Insemination

Q. MTP

Ans. MTP — Medical Termination of Pregnancy

Q.9. Classify the following contraceptive measures into different methods of birth control.

Q. Saheli

Ans. Oral pills

Q. Tubectomy

Ans. Surgical method

Q. Vasectomy

Ans. Surgical method

Q. Condoms

Ans. Barrier method

Q. Diaphragms

Ans. Barrier method

Q. Cervical caps

Ans. Barrier method

Long Answer Questions (PYQ)

[5 Marks]

Q.1. A large number of married couples the world over are childless. It is shocking to know that in India the female partner is often blamed for the couple being childless.

Q. Why in your opinion the female partner is often blamed for such situations in India?

Ans. Female partner is often blamed due to following reasons:

(i) social mind set

(ii) inequality of sexes

(iii) lack of awareness/male dominated society.

(iv) Awareness to be created that abnormality can occur in both male and females and infertility issues with suitable examples

(v) Mutual respect towards both the partners in case of the problem and to find the remedy from medical experts

(vi) Educate them to find the reason and not believe in superstitions.

Q. State any two reasons responsible for the cause of infertility.

Ans. Infertility is caused due to physical abnormality in reproductive system, congenital, immunological or psychological problems.

Q. Suggest a technique that can help the couple to have a child where the problem is with the male partner.

Ans. Intra cytoplasmic sperm injection (ICSI), artificial insemination (AI), Intra uterine insemination (IUI) can help couples where the problem is with male partner.

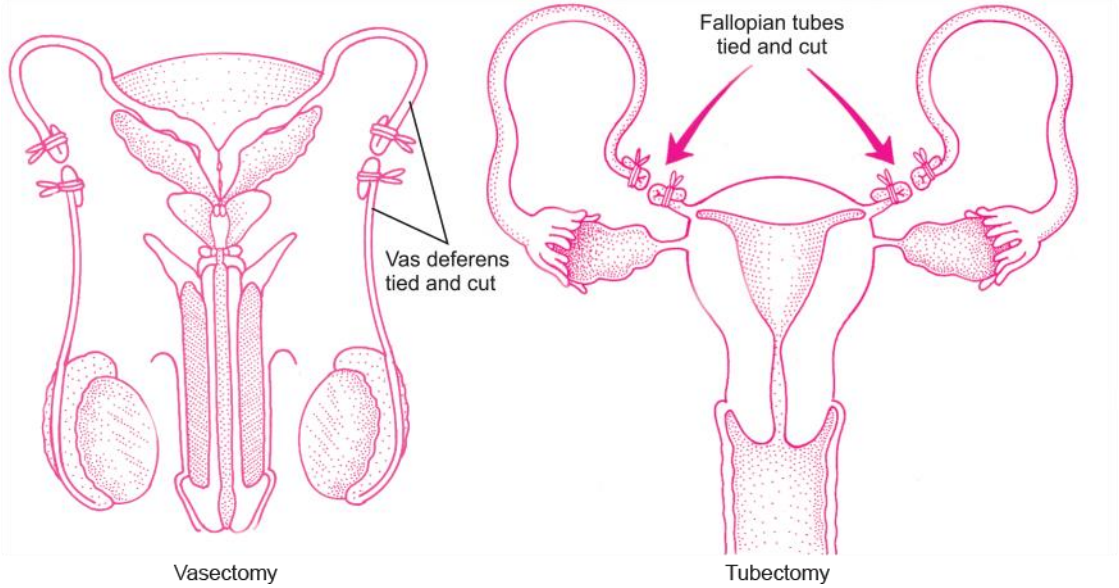
Q.2. Name and explain the surgical method advised to human males and females as a means of birth control. Mention its one advantage and one disadvantage.

Ans. Surgical methods (Sterilisation)

● These are terminal and permanent methods which block the transport of gametes, thereby preventing conception.

● In males, a small part of the vas deferens is removed and tied up through a small incision onthe scrotum. This is called vasectomy.

● In females, a small part of the fallopian tube is removed and tied up through a small incision in the abdomen or vagina. This is called tubectomy.



Sterilisation methods

Advantage: It is the permanent and most effective method of preventing contraception as it blocks transport of gametes.

Disadvantage: This process of surgical methods is irreversible.

Long Answer Questions (OIQ)

[5 Marks]

Q.1. What do you mean by reproductive health? Mention the different ways in which people are made aware of the significance of reproductively healthy society.

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

Following measures are needed to make people aware of reproductively healthy society:

(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 sexrelated crimes.

(vi) Statutory ban on amniocentesis to legally check female foeticides.

Q.2. A village health worker was taking a session with women. She tells the women that one has to be very careful while using oral pills as method of birth control. Wrong usage can actually promote conception.

Q. Analyse the statement and compare the merits and demerits of using oral pills and surgical methods of birth control.

Ans.

	Contraceptive pills	**Surgical methods**
Merits	1. Pills are effective with lesser side effects and well accepted by females. 2. Reversible method.	1. Surgical intervention block gamete transport. 2. Highly effective.
Demerits	1. If not taken on right days they can promote conception. 2. Can have side effects if taken for a long time.	1. Not reversible. 2. Can affect health of a person if performed in unhygienic condition.

Q. Village women were confused as to how a thin metallic copper loop can provide protection against pregnancy. Justify the use, explaining the mode of action of IUDs.

Ans. Mode of action of IUDs

(i) Increase Phagocytosis of sperms within the uterus.

(ii) Cu++ released suppress sperm motility.

(iii) Hormone releasing IUDs make uterus unsuitable for implantation.

Q.3. Describe the various methods of birth control.

Ans. TAKE STEP BY STEP

Birth Control

The most important step to control population growth is to motivate smaller families by using various contraceptive methods.

An ideal contraceptive should be:

- user-friendly
- easily available
- effective and reversible with no or least side-effects
- non-interfering with the sexual drive/desire and/or the sexual act of the user.

Methods of Birth Control

The contraceptive methods are divided into following categories:

1. Natural/traditional methods
2. Barrier methods
3. Intra uterine devices (IUDs)
4. Oral contraceptives
5. Injections and implants
6. Surgical methods.

Natural methods

- These are natural methods that work on the principle of avoiding the meeting of ovum and sperm.

    1. **Periodic abstinence** is a method in which a couple avoids or abstains from coitus from day 10–17 of the menstrual cycle, when ovulation is expected to occur.
    2. **Coitus interruptus** or withdrawal is a method in which male partner withdraws his penis from the vagina just before ejaculation so as to avoid insemination.
    3. **Lactational amenorrhea** is based on the principle that during the period of lactation after parturition, ovulation does not occur.

Barrier methods

- These methods prevent the contact of sperm and ovum with the help of barriers. Such methods are available for both males and females.

    1. **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.

2. **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.
3. **Spermicidal creams, jellies and foams** are used along with these barriers to increase their contraceptive efficiency.

Intra uterine devices (IUDs)

- These devices are inserted by doctors in the uterus through vagina.
- There are three types of IUDs available:

1. **Non-medicated IUDs:** These increase phagocytosis of sperms within the uterus, *e.g.*, Lippes loop.
2. **Copper releasing IUDs:** Along with phagocytosis of sperms, the copper ions released suppress sperm motility and fertilising capacity of sperms, *e.g.*, CuT, Cu 7, Multiload 375.
3. **Hormone releasing IUDs:** These make the uterus unsuitable for implantation and the cervix hostile to sperms, *e.g.*, Progestasert, LNG-20.

Oral contraceptive

- This involves uptake of hormonal preparations of either progestogens or progestogen− estrogen combinations in the form of **pills** by females.
- They inhibit ovulation and implantation as well as alter the quality of cervical mucus to prevent entry of sperms.
- '*Saheli*', an oral contraceptive for females containing a non-steroidal preparation was developed by scientists at Central Drug Research Institute (CDRI) in Lucknow.
- Pills have high contraceptive value and few side effects.

Injections and implants

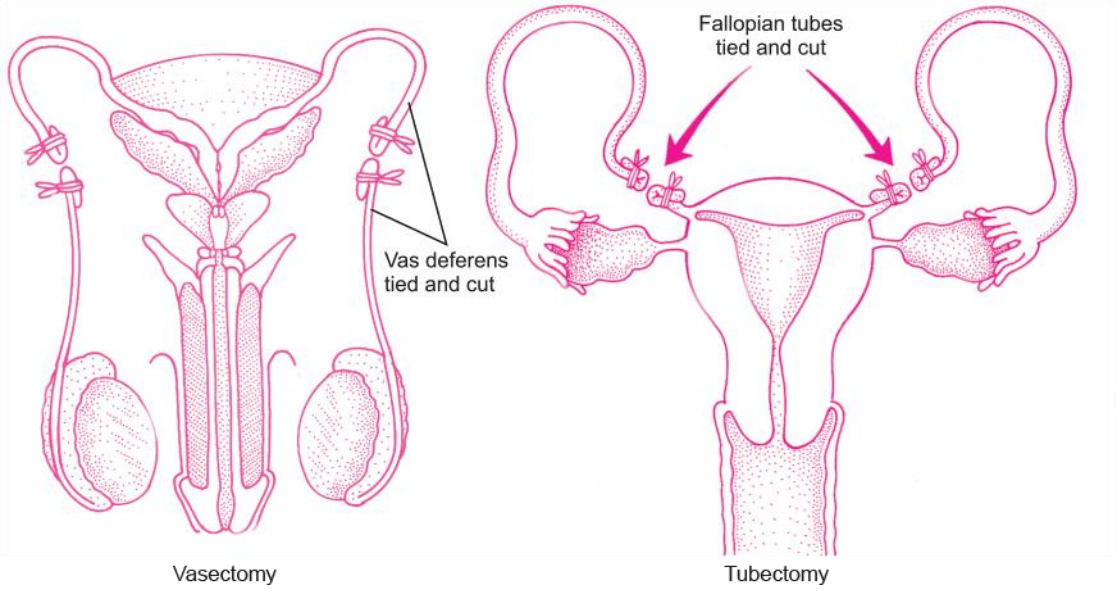
- Progestogens or progestogen–estrogen combination can also be used by females as injections or implants under the skin.
- Their mode of action is similar to that of pills but their effective periods are longer.

Surgical methods (Sterilisation)

- These are terminal and permanent methods which block the transport of gametes, thereby preventing conception.
- In males, a small part of the vas deferens is removed and tied up through a small incision onthe scrotum. This is called **vasectomy**.
- In females, a small part of the fallopian tube is removed and tied up through a small incision in the abdomen or vagina. This is called **tubectomy**.

Q.4. Describe vasectomy and tubectomy with diagram.

Ans. Vasectomy and tubectomy are permanent methods of contraception and are also known as sterilisation techniques. These methods are generally advised to male or female partner as a terminal method to prevent any more pregnancies. It blocks gamete transport and thereby prevents conception. In vasectomy, a small part of the vas deferens is removed and then tied up through a small incision on the scrotum whereas in tubectomy a small part of the fallopian tube is removed and then tied up through a small incision in the abdomen or through vagina. These techniques are highly effective but their reversibility is very poor.



Sterilisation methods

Q.5. What are the Assisted Reproductive Techniques practised to help infertile couples? Describe any three techniques.

Ans. The infertile couples could be assisted to have children through certain special techniques called assisted reproductive technologies (ART), which are given below.

(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 induced to form zygote under simulated conditions in the laboratory. This process is called in vitro fertilisation (IVF).

The zygote or early embryo with up to 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 in another 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) Intra Cytoplasmic Sperm Injection (ICSI)

It is a procedure to form an embryo in the laboratory by directly injecting the sperm into an ovum.

(iv) 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.6. STDs are a threat to reproductive health. Describe any two such diseases and suggest preventive measures.

Ans. Sexually Transmitted Diseases (STDs)

Infections or diseases that are transmitted through sexual intercourse are collectively called sexually transmitted diseases (STDs) or venereal diseases (VD) or reproductive tract infections (RTI). These include gonorrhoea, syphilis, genital herpes, chlamydiasis, genital warts, trichomoniasis, hepatitis-B, HIV.

Early symptoms: Itching, fluid discharge, slight pain and swellings in the genital region.

Complications due to chronic STDs: Pelvic inflammatory diseases (PID), abortions, still births, ectopic pregnancies, infertility, or even cancer of the reproductive tract.

Transmission of hepatitis-B and HIV occurs by the following ways:

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.

By following simple principles, STDs can be prevented:

1. Avoid sex with unknown partners/multiple partners.

2. Always use condoms during coitus.

3. Contact a qualified doctor for any doubt, in early stage of infection.

Q.7. Expand the following:

i. ART

ii. GIFT

iii. ICSI

iv. RTI

v. IUI

Ans.

i. ART: Assisted Reproductive Technology

ii. GIFT: Gamete Intra Fallopian Transfer

iii. ICST: Intra Cytoplasmic Sperm Injection

iv. RTI: Reproductive Tract Infections

v. IUI: Intra Uterine Insemination