

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