

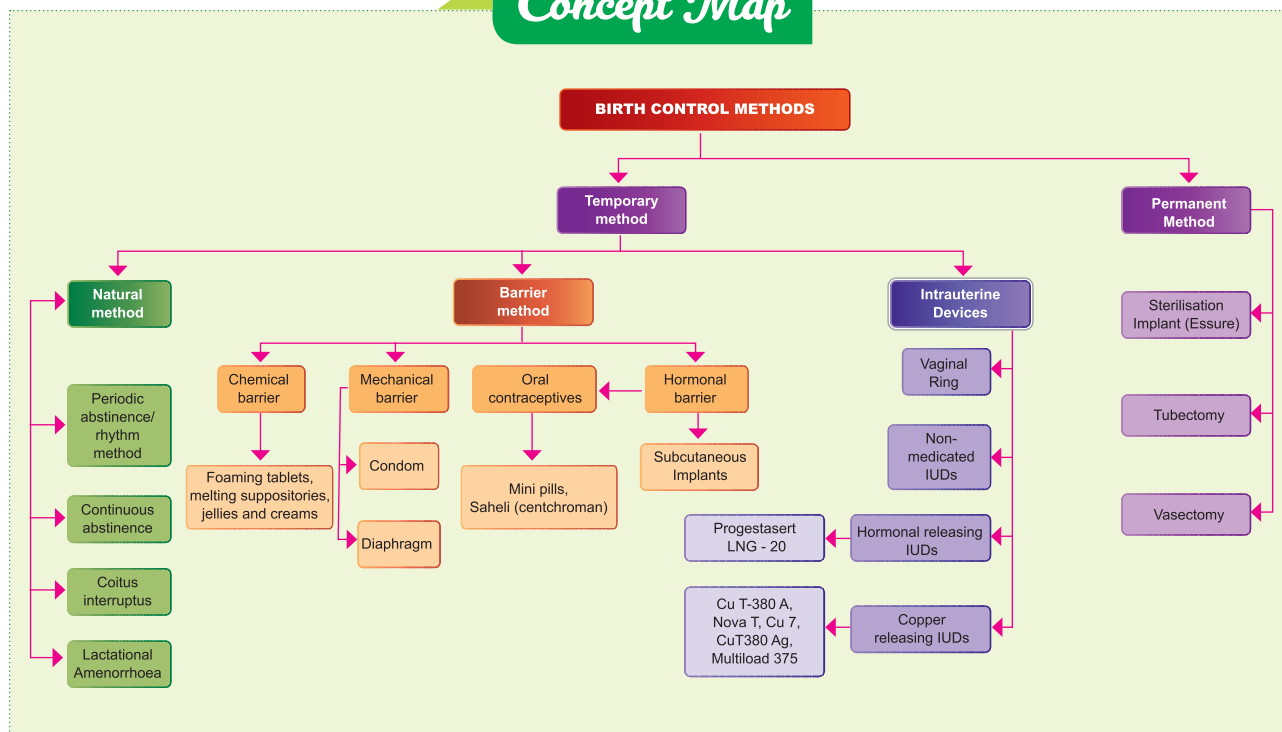


REPRODUCTIVE HEALTH

CHAPTER SNAPSHOT

- 3.1 Need for reproductive health Problems and strategies
- 3.2. Amniocentesis and its statutory ban
- 3.3. Social impact of sex ratio, female foeticide and infanticide
- 3.4. Population explosion and birth control
- 3.5. Medical termination of pregnancy (MTP)
- 3.6. Sexually transmitted diseases (STD)
- 3.7. Infertility
- 3.8. Assisted reproductive technologies (ART)
- 3.9. Detection of foetal disorders during early pregnancy

Concept Map



Evaluation

1. Which of the following is correct regarding HIV, hepatitis B, gonorrhoea and trichomoniasis?

- (a) Gonorrhoea is a STD whereas others are not.
- (b) Trichomoniasis is a viral disease whereas others are bacterial.
- (c) HIV is a pathogen whereas others are diseases.
- (d) Hepatitis B is eradicated completely whereas others are not.

[Ans. (c) HIV is a pathogen whereas others are diseases]

2. Which one of the following groups includes sexually transmitted diseases caused by bacteria only?

- (a) Syphilis, gonorrhoea and candidiasis
- (b) Syphilis, chlamydiasis and gonorrhoea
- (c) Syphilis, gonorrhoea and trichomoniasis
- (d) Syphilis, trichomoniasis and pediculosis

[Ans. (b) Syphilis, chlamydiasis and gonorrhoea]

3. Identify the correct statements from the following

- (a) Chlamydiasis is a viral disease.
- (b) Gonorrhoea is caused by a spirochaete bacterium, *Treponema palladium*.
- (c) The incubation period for syphilis is 2 to 14 days in males and 7 to 21 days in females.
- (d) Both syphilis and gonorrhoea are easily cured with antibiotics.

[Ans. (d) Both syphilis and gonorrhoea are easily cured with antibiotics]

4. A contraceptive pill prevents ovulation by

- (a) blocking fallopian tube
- (b) inhibiting release of FSH and LH
- (c) stimulating release of FSH and LH
- (d) causing immediate degeneration of released ovum.

[Ans. (b) inhibiting release of FSH and LH]

5. The approach which does not give the defined action of contraceptive is

(a)	Hormonal contraceptive	Prevents entry of sperms, prevent ovulation and fertilization
(b)	Vasectomy	Prevents spermatogenesis
(c)	Barrier method	Prevents fertilization
(d)	Intra uterine device	Increases phagocytosis of sperms, suppresses sperm motility and fertilizing capacity of sperms

[Ans. (b) Vasectomy - Prevents spermatogenesis]

6. Read the given statements and select the correct option.

Statement 1: Diaphragms, cervical caps and vaults are made of rubber and are inserted into the female reproductive tract to cover the cervix before coitus.

Statement 2: They are chemical barriers of conception and are reusable.

- (a) Both statements 1 and 2 are correct and statement 2 is the correct explanation of statement 1.
- (b) Both statements 1 and 2 are correct but statement 2 is not the correct explanation of statement 1.
- (c) Statement 1 is correct but statement 2 is incorrect.
- (d) Both statements 1 and 2 are incorrect.

[Ans. (c) Statement 1 is correct but statement 2 is incorrect]



7. Match column I with column II and select the correct option from the codes given below.

	Column I		Column II
A.	Copper releasing IUD	(i)	LNG-20
B.	Hormone releasing	(ii)	Lippes loop IUD
C.	Non medicated IUD	(iii)	Saheli
D.	Mini pills	(iv)	Multiload-375

- (a) A-(iv), B-(ii), C-(i), D-(iii)
 (b) A-(iv), B-(i), C-(iii), D-(ii)
 (c) A-(i), B-(iv), C-(ii), D-(iii)
 (d) A-(iv), B-(i), C-(ii), D-(iii)

[Ans. (d) A-(iv), B-(i), C-(ii), D-(iii)]

8. Select the incorrect action of hormonal contraceptive pills from the following

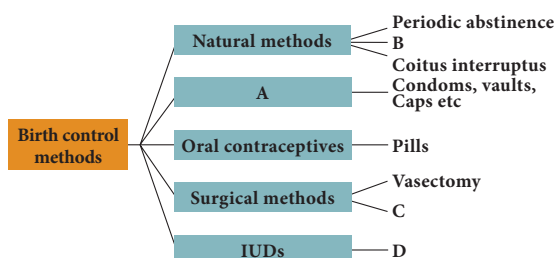
- (a) Inhibition of spermatogenesis.
 (b) Inhibition of ovulation.
 (c) Changes in cervical mucus impairing its ability to allow passage and transport of sperms.
 (d) Alteration in uterine endometrium to make it unsuitable for implantation.

[Ans. (a) Inhibition of spermatogenesis.]

9. What is amniocentesis? Why a statutory ban is imposed on this technique?

Ans. Amniocentesis is a prenatal technique used to detect any chromosomal abnormalities in the foetus and it is being often misused to determine the sex of the foetus. Once the sex of the foetus is known, there may be a chance of female foeticide. Hence, a statutory ban on amniocentesis is imposed.

10. Select the correct term from the bracket and complete the given branching tree



(Barriers, Lactational amenorrhoea, CuT, Tubectomy)

- Ans. A – Barrier methods
 B – Lactational amenorrhoea
 C – Tubectomy
 D – CuT

11. Correct the following statements

- a) Transfer of an ovum collected from donor into the fallopian tube is called ZIFT.
 b) Transferring of an embryo with more than 8 blastomeres into uterus is called GIFT.
 c) Multiload 375 is a hormone releasing IUD.

Ans. (a) Transfer of an ovum collected from donor into the fallopian tube is called **GIFT (Gamete Intra-fallopian transfer)**

(b) Transferring of an embryo with more than 8 blastomeres into uterus is called **IUT (Intra uterine transfer)**

(c) Multi load 375 is a **copper** releasing IUD.

12. Which method do you suggest the couple to have a baby, if the male partner fails to inseminate the female or due to very low sperm count in the ejaculate?

Ans. Intra Uterine Insemination (IUI)

13. Expand the following a) ZIFT b) ICSI

Ans. (a) ZIFT – Zygote intra-fallopian transfer

(b) ICSI – Intra-cytoplasmic sperm injection

14. What are the strategies to be implemented in India to attain total reproductive health?

Ans. These programmes are popularly named as 'Reproductive and Child Health Care (RCH)'. Major tasks carried out under these programmes are:

- (i) Creating awareness and providing medical assistance to build a healthy society.
 (ii) Introducing sex education in schools to provide information about adolescence and adolescence related changes.
 (iii) Educating couples and those in the marriageable age groups about the available birth control methods and family planning norms.
 (iv) Creating awareness about care for pregnant women, post-natal care of mother and child and the importance of breast feeding.

- (v) Encouraging and supporting governmental and non-governmental agencies to identify new methods and/or to improve upon the existing methods of birth control.

Health care programmes such as massive child immunization, supply of nutritional food to the pregnant women, Janani Suraksha Yojana, Janani Shishu Suraksha Karyakaram, RMNCH+A approach etc., are taken up at the national level by the Government of India.

15. Differentiate foeticide and infanticide.

Ans.

Foeticide	Infanticide
It refers to 'aborting the foetus in the mother's womb' intentionally.	It is 'killing the child after the birth'.

16. Describe the major STDs and their symptoms.

Ans. STD refers to sexually transmitted diseases. Some of the major sexually transmitted diseases and their symptoms are:

Name of the Disease	Causative agent	Symptom
Bacterial STI		
Gonorrhoea	<i>Neisseria gonorrhoeae</i>	Affects the urethra, rectum and throat and in females the cervix also get affected. Pain and pus discharge in the genital tract and burning sensation during urination.
Syphilis	<i>Treponema palladium</i>	Primary stage: Formation of painless ulcer on the external genitalia. Secondary stage: Skin lesions, rashes, swollen joints and fever and hair loss. Tertiary stage: Appearance of chronic ulcers on nose, lower legs and palate. Loss of movement, mental disorder, visual impairment, heart problems, gummas (soft non-cancerous growths) etc
Chlamydiasis	<i>Chlamydia trachomatis</i>	Trachoma, affects the cells of the columnar epithelium in the urinogenital tract, respiratory tract and conjunctiva.
Viral STI		
Genital herpes	Herpes simplex virus	Sores in and around the vulva, vagina, urethra in female or sores on or around the penis in male. Pain during urination, bleeding between periods. Swelling in the groin nodes.
Genital warts	Human papilloma virus (HPV)	Hard outgrowths (Tumour) on the external genitalia, cervix and perianal region.
Hepatitis-B	Hepatitis B virus (HBV)	Fatigue, jaundice, fever, rash and stomach pain. Liver cirrhosis and liver failure occur in the later stage.
AIDS	Human immunodeficiency virus (HIV)	Enlarged lymph nodes, prolonged fever, prolonged diarrhoea, weight reduction, night sweating.



Name of the Disease	Causative agent	Symptom
Fungal STI		
Candidiasis	<i>Candida albicans</i>	Attacks mouth, throat, intestinal tract and vagina. Vaginal itching or soreness, abnormal vaginal discharge and pain during urination.
Protozoan STI		
Trichomoniasis	<i>Trichomonas vaginalis</i>	Vaginitis, greenish yellow vaginal discharge, itching and burning sensation, urethritis, epididymitis and prostatitis.

17. How are STDs transmitted?

- Ans. (i)** Normally Sexually transmitted infections (STI) are transmitted from person to person during intimate sexual contact with an infected partner.
- (ii)** Infections like Hepatitis-B and HIV are transmitted sexually as well as by sharing of infusion needles, surgical instruments, etc with infected people, blood transfusion or from infected mother to baby.

18. Write the preventive measures of STDs.

Ans. Prevention of STDs (Sexually Transmitted diseases)

- (i)** Avoid sex with unknown partner/ multiple partners
- (ii)** use condoms
- (iii)** In case of doubt, consult a doctor for diagnosis and get complete treatment.

19. The procedure of GIFT involves the transfer of female gametes into the fallopian tube, can gametes be transferred to the uterus to achieve the same result? Explain.

- Ans. (i)** Fertilization of sperm and egg takes place in the fallopian tube. The fertilized egg (Zygote) slowly move down and reaches the uterus as a ball of cells for implantation.
- (ii)** Therefore in most cases related to the Assisted Reproductive Technology, the zygote is transferred to the uterus.
- (iii)** In a method called as Intra—uterine insemination male gametes are introduced in the uterus.
- This is a procedure to treat infertile men with low sperm count. The semen is

collected either from the husband or from a healthy donor and is introduced into the uterus through the vagina by a catheter after stimulating the ovaries to produce more ova.

The sperms swim towards the fallopian tubes to fertilize the egg, resulting in normal pregnancy.

20. Amniocentesis, the foetal sex determination test, is banned in our country, Is it necessary? comment.

- Ans. (i)** Amniocentesis is a prenatal technique used to detect any chromosomal abnormalities in the foetus.
- (ii)** This can be done to check if the baby is normal or has any kind of genetic defect.
- (iii)** If the baby shows genetic abnormalities, abortion of the foetus may be required, Therefore amniocentesis can help to confirm the healthy status of the foetus. But using the technique for sex determination must be banned, because it can lead to female foeticide.
- (iv)** Now a days other tests are also available to test the chromosomal abnormalities of the foetus.

21. Open Book Assessment

‘Healthy reproduction, legally checked birth control measures and proper family planning programmes are essential for the survival of mankind’ Justify.

Ans. Open book Assessment

The teacher may request students to make use of the text and find answers for the same in the class.



Additional Questions

CHOOSE THE CORRECT ANSWER

1 Mark

I. CHOOSE THE CORRECT OPTIONS FOR THE BELOW QUESTIONS

1. The family planning programme was initiated by India in _____

(a) 1953 (b) 1972
(c) 1963 (d) 1951

[Ans. (d) 1951]

2. In the year _____ India is expected to become the largest country in population size _____

(a) 2021 (b) 2025
(c) 2022 (d) 2030

[Ans. (c) 2022]

3. Sperm remains active for _____ hours in the female reproductive tract

(a) 60 (b) 70 (c) 72 (d) 78

[Ans. (c) 72]

4. Saheli is an example for _____ method

(a) Mechanical barrier (b) Chemical barrier
(c) Hormonal barrier
(d) Intra uterine devices

[Ans. (c) Hormonal barrier]

5. Formation of chronic ulcer is a symptom of _____

(a) Genital herpes (b) Syphilis
(c) Gonorrhoea (d) AIDS

[Ans. (b) Syphilis]

6. Fatigue, Jaundice, stomach pain are the symptoms of _____

(a) Genital warts (b) AIDS
(c) Chlamydia (d) Hepatitis-B

[Ans. (d) Hepatitis-B]

7. The incubation period for _____ varies between 1-8 months.

(a) HPV (b) HIV
(c) HBV (d) candida

[Ans. (a) HPV]

8. The incubation period for _____ can be more than 10 years.

(a) HPV (b) HBV
(c) Treponema (d) HIV

[Ans. (d) HIV]

9. PAP smear can help to detect

(a) Jaundice (b) Cancer
(c) AIDS (d) Hepatitis B

[Ans. (b) Cancer]

10. _____ vaccination of girls between 9-13 years can prevent cervical cancer.

(a) HIV (b) HPV
(c) MMR (d) HBV

[Ans. (b) HPV]

11. Mayer - Rokitansky syndrome is a condition in which

(a) Ova are not produced
(b) Ovaries are not formed
(c) Uterus is not functioning
(d) Fallopian tube is ruptured

[Ans. (c) Uterus is not functioning]

12. Test tube baby is got by _____ technique

(a) IUI (b) CVS
(c) ICSI (d) IVF

[Ans. (d) IVF]

13. Cryopreservation of embryos are done when _____

(a) When eggs are not available
(b) Sperm count is less
(c) More embryos are available than the required
(d) there is abnormality in the embryo

[Ans. (c) More embryos are available than the required]

14. One sperm is directly injected into cytoplasm of the egg in _____ technique

(a) ICSI (b) GIFT
(c) IUT (d) TCSE

[Ans. (a) ICSI]

15. _____ involves taking a sample of placental tissues to test for chromosomal abnormalities

(a) CVS (b) ICSI
(c) TESE (d) IVF

[Ans. (a) CVS]



VERY SHORT ANSWERS

2 Marks

1. What is PCPNDT Act?

Ans. Government of India has taken various steps like PCPNDT Act (Preconception and Prenatal diagnostic technique act-1994) enacted to ban the identification of sex and to prevent the use of prenatal diagnostic techniques for selective abortion.

2. Define birth control.

Ans. The voluntary use of contraceptive procedures to prevent fertilization or prevent implantation of a fertilized egg in the uterus is termed as birth control.

3. What are the characteristics of an ideal contraceptive?

Ans. An ideal contraceptive should be user friendly, easily available, with least side effects and should not interfere with sexual drive.

4. What is the purpose of barrier method of contraception?

Ans. In these methods, the ovum and sperm are prevented from meeting so that fertilization does not occur.

5. What is Saheli?

Ans. Saheli, is a contraceptive pill devised by Central Drug Research Institute (CDRI) in Lucknow, India. It contains a non-steroidal preparation called centchroman.

6. What is the role of IUDs?

Ans. IUD - Intra-Uterine Device. They increase of phagocytosis of sperm within the uterus and prevent meeting of gametes there by acting as birth control measure.

7. Define Tubectomy and Vascetomy.

Ans. (i) Tubectomy is the surgical sterilisation method in women.

(ii) Vasectomy is the surgical sterilisation method in male.

8. What does MTP stand for?

Ans. (i) MTP stands for medical termination of pregnancy

(ii) Medical method of abortion is a voluntary or intentional termination of pregnancy in a non-surgical or non-invasive way.

9. Name two sexually transmitted infections and their casual agent.

Ans.

Disease	Casual agent
Hepatitis-B	Hepatitis B virus
AIDS	HIV(Human Immunodeficiency Virus)

10. Mention two sexually transmitted diseases caused by bacteria.

Ans. Syphilis and Gonorrhoea

11. Mention two sexually transmitted diseases caused by virus.

Ans. AIDS and Genital Herpes.

12. What is cervical dysplasia?

Ans. Cervical cancer is caused by a sexually transmitted virus called Human Papilloma virus (HPV). HPV may cause abnormal growth of cervical cells or cervical dysplasia.

13. What is IUT?

Ans. IUT - Intra Uterine Transfer

(i) Embryo with more than 8 blastomeres is inserted into uterus to complete its further development.

(ii) It is a method to achieve pregnancy by Assisted Reproductive technology.

14. Define Infertility.

Ans. Inability to conceive or produce children even after unprotected sexual cohabitation is called infertility.

15. Define Surrogacy.

Ans. Surrogacy is a method of assisted reproduction or agreement whereby a woman agrees to carry a pregnancy for another person, who will become the newborn child's parent after birth.

16. Why is Ultrasonography performed during pregnancy?

Ans. Ultrasonography is usually performed in the first trimester for dating, determination of the number of foetuses, and for assessment of early pregnancy complications.

17. What is CVS?

Ans. CVS - Chorionic Villus Sampling. CVS is a prenatal test that involves taking a sample of the placental tissue to test for chromosomal abnormalities.

**18. What is a Foetoscope?**

- Ans. (i)** Foetoscope is used to monitor the foetal heart rate and other functions during late pregnancy and labour. The average foetal heart rate is between 120 and 160 beats per minute.
- (ii)** An abnormal foetal heart rate or pattern may mean that the foetus is not getting enough oxygen and it indicates other problems.

19. What is Mayer-Rokitansky syndrome?

- Ans.** All women are born with ovaries, but some do not have functional uterus. This condition is called Mayer-Rokitansky syndrome.

SHORT ANSWERS**3 Marks****1. What is lactational amenorrhoea?**

- Ans.** Menstrual cycles resume as early as 6 to 8 weeks from parturition. However, the reappearance of normal ovarian cycles may be delayed for six months during breastfeeding. This delay in ovarian cycles is called lactational amenorrhoea. It serves as a natural but an unreliable form of birth control.

2. Mention the type of IUDs with example.

- Ans. (i)** Copper releasing IUD - Multiload 375 CuT 380.
- (ii)** Hormone – releasing IUD - LNG-20.
- (iii)** Non-medicated IUD - Lippes loop.

3. Mention any 3 causes for infertility.

- Ans. (i)** Low body fat or anorexia in women. i.e. a psychiatric eating disorder characterised by the fear of gaining weight.
- (ii)** Under developed ovaries or testes.
- (iii)** Female may develop antibodies against her partner's sperm.

4. What is ZIFT?

- Ans.** ZIFT - Zygote Intra-Fallopian Transfer. As in IVF, the zygote upto 8 blastomere stage is transferred to the fallopian tube by laparoscopy. The zygote continues its natural divisions and migrates towards the uterus where it gets implanted.

5. What is Cryopreservation?

- Ans.** Cryopreservation (or freezing) of embryos is often used when there are more embryos than needed for a single IVF transfer. Embryo

cryopreservation can provide an additional opportunity for pregnancy, through a Frozen embryo transfer (FET), without undergoing another ovarian stimulation and retrieval.

6. What is GIFT?

- Ans.** GIFT - Gamete Intra-Fallopian Transfer

- (i)** Transfer of an ovum collected from a donor into the fallopian tube. In this the eggs are collected from the ovaries and placed with the sperms in one of the fallopian tubes.
- (ii)** The zygote travels toward the uterus and gets implanted in the inner lining of the uterus.

7. What is embryo transfer technique?

- Ans.** The transfer of an embryo with more than 8 blastomeres stage into uterus is called embryo transfer technique.

8. What are the causes of infertility in human beings?

- Ans.** Inability to conceive or produce children even after unprotected sexual cohabitation is called infertility.

Causes of infertility:

- (i)** Pelvic inflammatory disease (PID), uterine fibroids and endometriosis are the most common causes of infertility in women.
- (ii)** Low body fat or anorexia in women. i.e. a psychiatric eating disorder characterised by the fear of gaining weight.
- (iii)** Under developed ovaries or testes.

9. What is micro-testicular sperm extraction (TESE)?

- Ans.** Microsurgical sperm retrieval from the testicle involves a dilation of the microscope, the seminiferous tubules under the microscope and small amount of testicular tissue in areas of active sperm production are removed. This is improved for sperm yield compared to traditional biopsy techniques.

10. How will you detect the foetal disorders, during the early stages of pregnancy?

- Ans.** The techniques used to detect the foetal disorders during the early stages of pregnancy are:
- (i)** Ultrasound scanning
- (ii)** Amniocentesis
- (iii)** Chorionic villus sampling (CVS)
- (iv)** Foetoscope



LONG ANSWERS

5 Marks

1. Write notes on any two techniques in Assisted Reproductive Technology (ART).

Ans. A collection of procedures which includes the handling of gametes and / or embryos outside the body to achieve a pregnancy is known as Assisted Reproductive Technology. ART includes

- (i) **Intra-uterine insemination (IUI):** This is a procedure to treat infertile men with low sperm count. The semen is collected either from the husband or from a healthy donor and is introduced into the uterus through the vagina by a catheter after stimulating the ovaries to produce more ova. The sperms swim towards the fallopian tubes to fertilize the egg, resulting in normal pregnancy.
- (ii) **In vitro fertilization (IVF):** In this technique, sperm and eggs are allowed to unite outside the body in a laboratory. One or more fertilized eggs may be transferred into the woman's uterus, where they may implant in the uterine lining and develop. Excess embryos may be cryopreserved (frozen) for future use. IVF is used to treat many causes of infertility.
- (iii) The basic steps in an IVF treatment cycle are ovarian stimulation, egg retrieval, fertilization, embryo culture and embryo transfer. Egg retrieval is done by minor surgery under general anesthesia, using ultrasound guide after 34 to 37 hours of hCG (human chorionic gonadotropin) injection. The eggs are prepared and stripped from the surrounding cells. At the same time, sperm preparation is done using a special media. After preparing the sperms, the eggs are brought together. 10,000-1,00,000 motile sperms are needed for each egg. Then the zygote is allowed to divide to form 8 celled blastomere and then transferred into the uterus for a successful pregnancy. The transfer of an embryo with more than 8 blastomeres stage into uterus is called embryo transfer technique.

2. Explain about breast self Examination and Early diagnosis of Cancer.

Ans. Breast self examination and early diagnosis of cancer

- (i) Breast is divided into 4 quadrants and the center (Nipple) which is the 5th quadrant.
- (ii) Each quadrant of the breast is felt for lumps using the palm of the opposite hand.
- (iii) The examination is done in both lying down and standing positions, monthly once after the 1st week of menstrual cycle.

This way if there are lumps or any deviation of the nipple to one side or any blood discharge from the nipple we can identify cancer at an early stage. Mammograms are done for women above the age of 40 years and for young girls and women below 40 years. Ultrasound of the breast aids in early diagnosis.

3. Write a note on cervical cancer.

Ans. Cervical cancer: Cervical cancer is caused by a sexually transmitted virus called Human Papilloma virus (HPV). HPV may cause abnormal growth of cervical cells or cervical dysplasia.

The most common symptoms and signs of cervical cancer are pelvic pain, increased vaginal discharge and abnormal vaginal bleeding. The risk factors for cervical cancer include

- (i) Having multiple sexual partners
- (ii) Prolonged use of contraceptive pills

Cervical cancer can be diagnosed by a Papanicolaou smear (PAP smear) combined with an HPV test. X-Ray, CT scan, MRI and a PET scan may also be used to determine the stage of cancer. The treatment options for cervical cancer include radiation therapy, surgery and chemotherapy.

Modern screening techniques can detect precancerous changes in the cervix. Therefore screening is recommended for women above 30 years once in a year. Cervical cancer can be prevented with vaccination. Primary prevention begins with HPV vaccination of girls aged 9 – 13 years, before they become sexually active. Modification in lifestyle can also help in preventing cervical cancer. Healthy diet, avoiding tobacco usage, preventing early marriages, practicing monogamy and regular exercise minimize the risk of cervical cancer.