

# PHC

432 Team

17

Sexual transmitted diseases



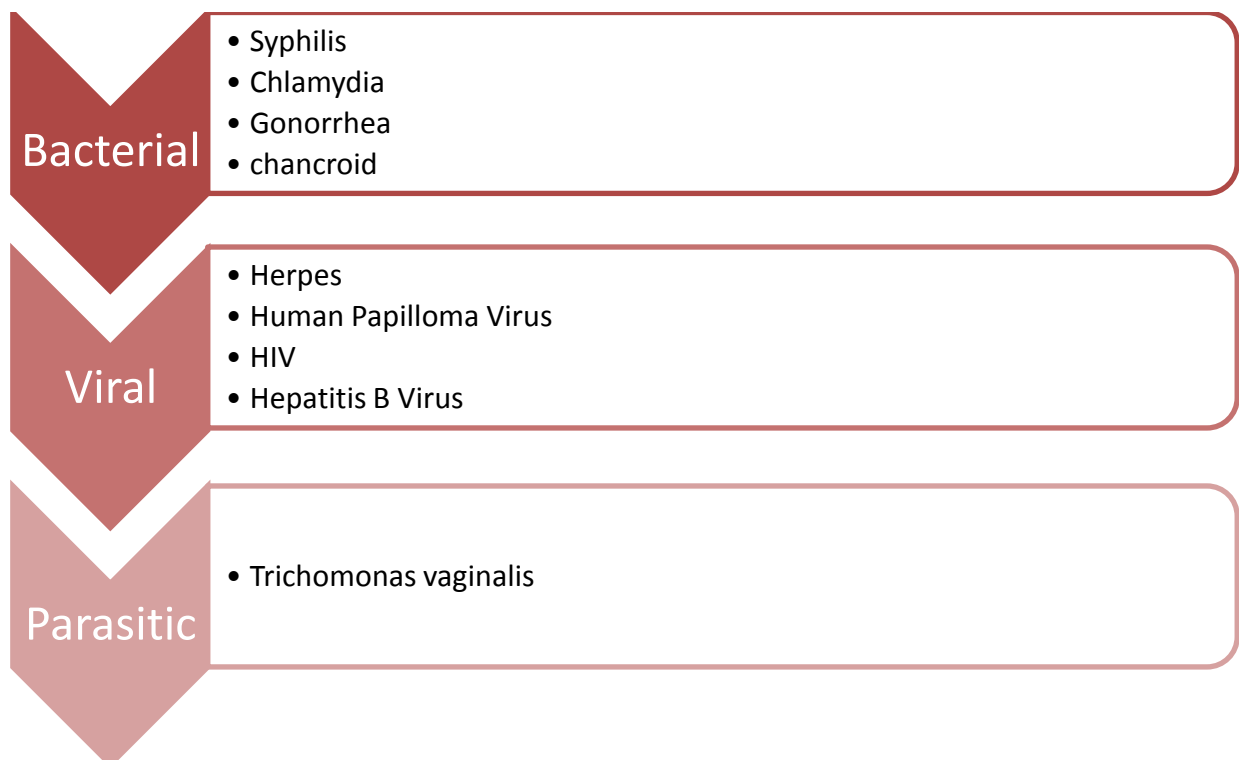
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# Objectives

- 1- List common sexual transmitted infections.
- 2- Discuss how to obtain sexual history and risk factors.
- 3- Discuss the differential diagnosis of:
  - Vaginal and urethral discharge.
  - Ulcerative and non-ulcerative genitalia.
  - Pelvic pain and dysuria.
- 4- List the possible sexual transmitted infections among heterosexual and homosexual person.
- 5- Discuss the investigation, diagnosis and management of sexual transmitted infections.
- 6- Discuss the methods of prevention.
- 7- Discuss the complications of sexual transmitted disease.
- 8- Dermatological pictures of different sexual transmitted infection.



## Sexually transmitted infections

### Definition:

“Sexually transmitted infections (STIs) are infections that are spread primarily through person-to-person sexual contact. There are more than 30 different sexually transmissible bacteria, viruses and parasites.” World Health Organization.

**Table .1/ Common bacterial infections**

Organism	Causes
<i>Neisseria gonorrhoeae</i>	Gonorrhoea or gonococcal infection
<i>Chlamydia trachomatis</i>	Chlamydial infections
<i>Treponema pallidum</i>	Syphilis
<i>Haemophilus ducreyi</i>	chancroid
<i>Klebsiella granulomatis</i>	Granuloma inguinale or donovanosis

**Table .2/ Common viral and Parasites infections**

Organism	Causes
Human immunodeficiency virus	AIDS
Herpes simplex virus type 1 & 2	Genital herpes
Human papilloma virus	Genital warts and certain subtypes lead to cervical cancer in women
Hepatitis B virus	Hepatitis and chronic cases may lead to cancer of the liver
<b>Parasites:</b> <i>Trichomonas vaginalis</i>	vaginal trichomoniasis

### How to approach a patient with STI:

1. Patients presenting with possible STIs are frequently anxious, embarrassed and concerned about confidentiality. The clinical setting must ensure privacy and reinforce confidentiality.

### 2. History:

A. The three most common symptoms are: Vaginal discharge, urethral discharge and genital ulceration

B. Also any associated fever, pain, itch, malodour, genital swelling, skin rash, joint pains and eye symptoms.

C. All patients should be asked about dysuria, haematuria and loin pain

D. In women, menstrual, contraception and obstetric history should be obtained.

E. What essential **questions must be asked?**

a) You must take a sexual history, perhaps prefacing this by saying, 'I understand you are married. When did you last have sex with your wife?'

b) The next question should be, 'When did you last have sex with anyone else?'. Let's say he answers somewhat gloomily, 'Last week'.

c) The questioning should continue along the following lines: 'Is this a regular partner or was it more of a "one-off"?'; 'Did you use a condom?' and 'Was this partner female or male?'

### Differential Diagnosis

**Think of a Differential diagnosis**  
*Once we think of a possible STIs, think of the causes of:*

<b>Vaginal Discharge</b>
<ul style="list-style-type: none"><li>• Candida</li><li>• Bacterial <u>vaginosis</u></li><li>• <u>Neisseria gonorrhoea</u></li><li>• <u>Chlamydia trachomatis</u></li><li>• Herpes simplex virus</li></ul>
<b>Urethral Discharge</b>
<ul style="list-style-type: none"><li>• <u>Neisseria gonorrhoea</u></li><li>• <u>Chlamydia trachomatis</u></li></ul>
<b>Genital Ulcers</b>
<ul style="list-style-type: none"><li>• Syphilis</li><li>• Herpes</li><li>• <u>Chancroid</u></li></ul>

### 3. Examination:

- A. General examination must include the mouth, throat, skin and lymph nodes in all patients.
- B. The inguinal, genital and perianal areas should be examined with a good light source.
- C. The groins should be palpated for lymphadenopathy and hernias.
- D. The pubic hair must be examined for nits and lice.
- E. The external genitalia must be examined for signs of erythema, fissures, ulcers, chancres, pigmented or hypopigmented areas and warts.
- F. The urethral meatus is located and the presence of discharge noted G. The cervix should be inspected for ulceration, discharge, bleeding and ectopy and the walls of the vagina for warts.

## Bacterial infections

### 1. Syphilis:

Syphilis is infection with the bacteria **Treponema pallidum** which spread through broken skin or mucous membranes. It has several **stages**:

**1) Primary syphilis:** The first stage present with **chancre** (a firm, **painless**, non-itchy skin ulceration) that form at the site of infection about 2-3 weeks after patients are first infected. He may not notice the sores or any symptoms. The sores disappear in about 4-6 weeks, even without treatment. The bacteria become dormant (inactive) in the system at this stage.

**2) Secondary syphilis:** Occurs about 5 weeks after the first sores heal. About 33% of those who do not have their primary syphilis treated will develop this second stage. These symptoms are; **diffuse rash** which frequently involves the palms of the hands and soles of the feet + **snail track ulcer**. They will often also go away without treatment again, the bacteria become dormant (inactive) in the system.



**3) Latent syphilis:** No symptoms just **sero-positivity** in the blood.

**4) Tertiary syphilis:** Final stage of syphilis 3-10 years after initial infection. The infection **spreads** to the brain, nervous system (causing meningitis seizures, dementia), heart, skin, and bones. The dormant bacteria may be detectable either by seeing the damage they cause to a part of the body, or through a blood test for syphilis.

## Investigations

**a. Dark field microscopy of smear:** from primary or secondary lesions. May be negative.

**b. Serologic tests:** (commonly used)

**i. Nontreponemal tests:** The tests are called rapid plasma reagin (RPR) and venereal disease research laboratory (VDRL). Become positive during the primary stage. Used for screening and titer used to follow up therapy.

**ii. Treponemal tests:** Detects specific antibody to T.pallidum

1. Fluorescent treponemal antibody (FTA-ABS).

2. Microhemagglutination test (MHA-TP) (antigen attached to erythrocytes)

- Positive results confirm RPR and VDRL.
- Treponemal tests are positive at all stages of syphilis.

**iii. IgM:** used to diagnose congenital syphilis.

**Treatment:** Antibiotics are effective early

1. **Benzathine penicillin** (1 dose, IM), if allergic: **doxycycline** for 2 weeks orally

2. If latent/tertiary: **Benzathine penicillin** (3 doses, IM) for 3 weeks 1 dose each week.

## 2. Chlamydia:

Chlamydia infection is a common sexually transmitted infection (STI) in humans caused by the bacterium **Chlamydia trachomatis**.

Incubation Period of Chlamydia: **7-21 days**

**Symptoms:** Some people refer to Chlamydia as a **silent disease** because there are rarely any noticeable symptoms initially. Experts say that approximately 50% of infected men and 70% of infected women will have **no symptoms at all**. Others will have such minor symptoms that the infection goes unnoticed.

1. Women Genital Chlamydia does not usually present symptoms in women.

However, there may be non-specific symptoms, including:

- Cystitis: inflammation of the bladder.
- A change in vaginal discharge.
- Slight lower abdominal pain.
- Pelvic pain.
- Pain during sexual intercourse - may be every time, or intermittently.
- Bleeding between menstrual periods.

2. Men symptoms are usually from complications.

**Causes:** Chlamydia may be transmitted by:

Having **unprotected sex** with an infected person. As Chlamydia infection often presents no symptoms, an infected person may pass it on to his/her sexual partner without knowing.

**Childbirth** - an infected mother can pass the infection on to her baby during childbirth. Sometimes the infection may lead to complications for the infant, such as pneumonia.

## Diagnoses

**Laboratory tests:** Nucleic acid amplification tests (NAAT):

These tests find the genetic material (DNA) of Chlamydia bacteria. These tests are the most sensitive tests available, meaning that they are very accurate and that they are very unlikely to have false-negative test results.

**a. Nucleic acid hybridization tests (DNA probe test):** A probe test also finds chlamydia DNA. A probe test is very accurate but is not as sensitive as nucleic acid amplification tests.

**b. Enzyme-linked immunosorbent assay (ELISA, EIA):** This quick test finds substances (Chlamydia antigens) that trigger the immune system to fight Chlamydia infection.

**c. Direct fluorescent antibody test (DFA):** This quick test also finds Chlamydia antigens.

**d. Chlamydia cell culture:** Cell culture is more expensive and takes longer (two days) than the other tests. The culture must be grown in a laboratory.

## Treatment

**Antibiotics:** are at least 95% effective in treating Chlamydia

**a. Azithromycin**

**b. Doxycycline**

Some patients may have the following side effects when they take the antibiotics:

- i. Diarrhea.
- ii. Abdominal cramps.
- iii. Dyspepsia (Upset stomach).
- iv. Nausea.



## Complications

Early diagnosis and treatment greatly reduces the risk of complications. Complications can be prevented with regular screening, or by seeking medical attention as soon as symptoms appear.

### 1. Women:

1. Pelvic Inflammatory Disease (PID).
2. Cervicitis: inflammation of the cervix.
3. Salpingitis - inflammation of the fallopian tubes.
4. Bartholinitis: inflammation of the Bartholin gland, which produces the lubricating mucus to make sexual intercourse easier.

### 2. Men:

1. Fertility.
2. Urethritis.
3. Epididymitis.
4. Reiter syndrome.

### 3. Gonorrhoea:

Gonorrhoea is caused by infection with **Neisseria gonorrhoea** and may involve columnar epithelium in the lower genital tract, rectum, pharynx and eyes.

Transmission is usually the result of vaginal, anal or oral sex.

**Gonococcal conjunctivitis** may be the result of accidental infection from contaminated fingers.

Untreated mothers may infect their babies during delivery, resulting in **ophthalmia neonatorum**.

Infection of children beyond the neonatal period is usually indicative of sexual abuse.

## Clinical features:

1. The incubation period is usually **2–10 days**.

### 2. In men:

- a. The anterior urethra is commonly infected, causing **urethral discharge and dysuria**, but symptoms are absent in about 10% of cases.
- b. Examination will usually show a **mucopurulent or purulent urethral discharge**.

### 3. In women:

- a. The urethra, paraurethral glands/ducts, Bartholin's glands/ducts or endocervical canal may be infected.
- b. About 80% of women who have gonorrhoea are **asymptomatic**. There may be vaginal discharge or dysuria but these symptoms are often due to additional infections such as chlamydia, trichomoniasis or candidiasis, making full investigation essential.
- c. Lower abdominal pain, dyspareunia and intermenstrual bleeding may be indicative of PID.
- d. Clinical examination may show no abnormality or pus may be expressed from urethra, paraurethral ducts or Bartholin's ducts. The cervix may be inflamed, with mucopurulent discharge and contact bleeding.

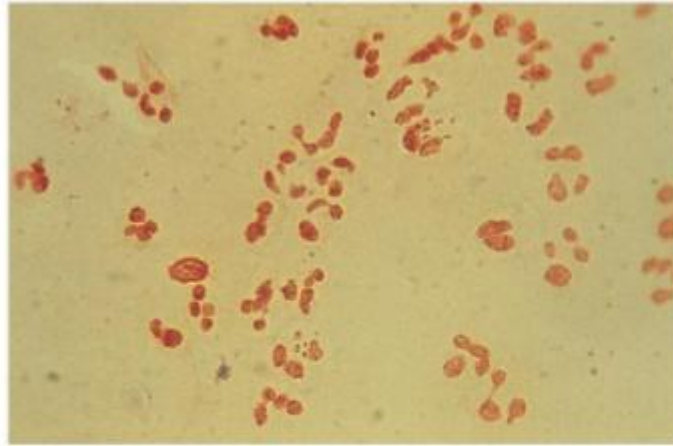
4. **Gonococcal conjunctivitis** is an uncommon complication, presenting with purulent discharge from the eye(s), severe inflammation of the conjunctivae and oedema of the eyelids, pain and photophobia.

5. Conjunctivitis must be treated **urgently** to prevent corneal damage.

## Investigations:

**Gram-negative intracellular diplococci** may be seen on **microscopy** of smears from infected sites (see the Figure).


The diagnosis must be confirmed by culture or nucleic acid amplification test (NAAT) such as polymerase chain reaction (PCR).




**Fig. 15.1** A Gram-stained urethral smear from a man with gonococcal urethritis. Gram-negative diplococci are seen within polymorphonuclear leucocytes.

## Management of adults:

Uncomplicated gonorrhoea responds to a single adequate dose of a suitable antimicrobial (The Box); cure rates should exceed 95%. Longer courses of antibiotics are required for complicated infection. Partner(s) of patients with gonorrhoea should be seen as soon as possible.

 <b>15.8 Treatment of uncomplicated anogenital gonorrhoea</b>	
<b>Uncomplicated infection</b>	
<ul style="list-style-type: none"> <li>• Cefixime 400 mg stat <i>or</i></li> <li>• Ciprofloxacin 500 mg orally stat<sup>1,2</sup> <i>or</i></li> <li>• Ofloxacin 400 mg orally stat<sup>1,2</sup> <i>or</i></li> <li>• Amoxicillin 3 g <i>plus</i> probenecid 1 g orally stat<sup>3</sup></li> </ul>	
<b>Quinolone resistance</b>	
<ul style="list-style-type: none"> <li>• Ceftriaxone 250 mg i.m. stat <i>or</i></li> <li>• Spectinomycin 2 g i.m. stat<sup>4</sup></li> </ul>	
<b>Pregnancy and breastfeeding</b>	
<ul style="list-style-type: none"> <li>• Cefixime 400 mg stat <i>or</i></li> <li>• Ceftriaxone 250 mg i.m. stat <i>or</i></li> <li>• Amoxicillin 3 g <i>plus</i> probenecid 1 g orally stat<sup>3</sup> <i>or</i></li> <li>• Spectinomycin 2 g i.m. stat<sup>4</sup></li> </ul>	
<b>Pharyngeal gonorrhoea</b>	
<ul style="list-style-type: none"> <li>• Cefixime 400 mg stat <i>or</i></li> <li>• Ceftriaxone 250 mg i.m. stat <i>or</i></li> <li>• Ciprofloxacin 500 mg<sup>1,2</sup> orally stat <i>or</i></li> <li>• Ofloxacin 400 mg<sup>1,2</sup> orally stat</li> </ul>	
<sup>1</sup> Contraindicated in pregnancy and breastfeeding. <sup>2</sup> If prevalence of quinolone resistance for <i>N. gonorrhoeae</i> < 5%. <sup>3</sup> If prevalence of penicillin resistance for <i>N. gonorrhoeae</i> < 5%. <sup>4</sup> May only be available in specialist clinics.	

**Delay in treatment may lead to complications (Box 15.9).**

 <b>15.9 Complications of delayed therapy in gonorrhoea</b>	
<ul style="list-style-type: none"> <li>• Acute prostatitis</li> <li>• Epididymo-orchitis</li> <li>• Bartholin's gland abscess</li> <li>• PID (may lead to infertility or ectopic pregnancy)</li> <li>• Disseminated gonococcal infection</li> </ul>	

## Viral infections:

### 1. Genital Herpes:

**Herpes Simplex Virus 2 HSV** replicates in the dermis & epidermis → travels via sensory nerves up to the dorsal root ganglia → can be reactivated at any time.

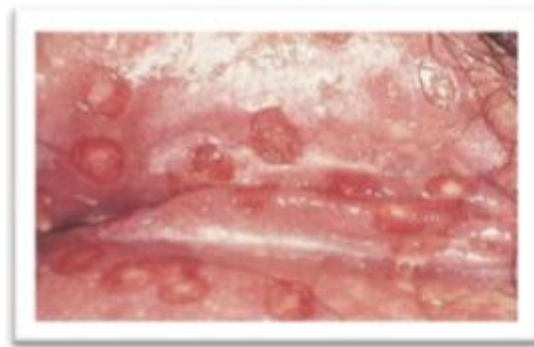
**Transmission:** Sexual contact with ulcer.

Asymptomatic individuals may still be shedding the virus.

### Presentation:

**Painful genital vesicles** or pustules

Tender inguinal **lymphadenopathy** and vaginal/urethral **discharge**.



### Treatment:

1. Antiviral Rx: **Acyclovir** (p.o./**topical** for **7-10d**) if primary.
2. **Oral** if reoccurring
3. **IV** if immunocomprised

### 2. Human papilloma virus (HPV):

1) Human papilloma virus has over 100 subtypes, **(type 16,18) cause cervical cancer. 6 and 11 cause genital warts.**

2) The most common sexually transmitted infection (STI).

## Presentation:

Pinkish/white small **lumps** or larger cauliflower-shaped lumps on the genital area.

## Investigation

Screen for cervical cancer by The Pap test (or **Pap smear**) looks for precancers, cell changes on the cervix.

## Treatment:

1. Podofilox lotion or gell
2. Cryotherapy.

## 3. HIV:

**1) Primary infection:** Mono like symptoms (fever, sweats malaise) occur within weeks after exposure.

**2) Asymptomatic infection:**

- a. Normal CD4 cell count **>500**
- b. Lasts for **5-8 years** depending on treatment

**3) Pre-Aids:**

- a. Evidence of immune system dysfunction
- b. Generalized lymphadenopathy, fungal infection, skin manifestations

**4) Aids:**

- a. **<200** CD4 cells
- b. Unusual cancers (kaposi sarcoma)
- c. PCP infection: most common cause of death
- d. TB

**Diagnosis:**

**Table .3/ Diagnosis of HIV:**

Types	Comments
<b>1. ELISA</b>	Screening test
	Sensitivity >99.5%
	Negative test excludes HIV
<b>2. Western Blot</b>	Confirmatory test
<b>3. PCR</b> (Polymerase Chain Reaction)	Confirmatory test
	To asses viral load

**Treatment:** Antiviral Therapy

Triple therapy **HAART:**

- 1) 2 nucleoside reverse transcriptase inhibitors.
- 2) Protease inhibitor.

**Doctor's notes:**

If male came to you with dysuria it's most likely to be STD. While in the female it's most likely to be UTI.

The most common STDs for Males: Gonorrhea & Chlamydia (common)

Syphilis is painless (can presents in the hand), while herpes is painful.

Chancroid (bacterial sexually transmitted infection characterized by painful sores on the genitalia.) usually single & in males.

## Summary

- STIs can be **bacterial** (syphilis, chlamydia, gonorrhea, chancroid) , **viral** (Herpes, HPV, HIV, HBV) or **parasitic** (Trichomonas vaginalis).
- In the **sexual history** you must ask about:
  - The problem as the patient sees it?
  - How long has the problem been present?
  - Is the problem related to the time, place, or partner?
  - Is there a loss of sex drive or dislike of sexual contact?
  - Are there problems in the relationship?
  - What are the stress factors as seen by the patient and by the partner?
  - Is there other anxiety, guilt, or anger not expressed?
  - Are there physical problems such as pain felt by either partner?
- **Risk factors** for STDs include:
  - Having unprotected sex.
  - Having sexual contact with multiple partners.
  - Having a history of STIs.
  - Anyone forced to have sexual intercourse or sexual activity.
  - Abusing alcohol or using recreational drugs.
  - Injecting drugs.
- Differential diagnosis: [page 3](#)

## Sexually Transmitted Diseases

Name of Disease	Causative Organism(s)	Organism Type	Local Effects	Systematic Effects	Prevention	Treatment
Gonorrhea	Neisseria Gonorrhea	Bacteria	Vaginal Discharge	Abdominal pain, fever, chills	Condoms	Penicillin
Chlamydia	Chlamydia	Bacteria	Vaginal Discharge	Abdominal pain, fever, chills	Condoms	Tetracycline or Erythromycin
Trichomonas	Trichomonas	Protazoa	Vaginal Discharge	None	Condoms	Metronidazole (Flagyl)
Herpes Simplex	Herpes Virus	Virus	Painful sore(s), occasional vaginal discharge	None	Condoms, suppressive therapy	
Syphilis	Treponema Pallidum	Bacteria	Painful sore(s)	Numerous, if untreated	Condoms	Penicillin
Lymphogranuloma Venereum	Chlamydia	Bacteria	Painful sore(s)	None	Condoms	Doxycycline Erythromycin
Genital Warts	Human Papilloma Virus (HPV), Moscullum Contageosum	Virus	Painless growths, "warts" or "skin tags"	Cervical Cancer (HPV)	Condoms, may assist but not prevent in all cases	Trichloroacetic Acid Topical, Imiquimod Topical
Human Immunodeficiency Virus (HIV)	HIV	Virus	Rare	AIDS	Condoms	Many
Hepatitis B or C	Hepatitis B or C Virus	Virus	None	Weakness, fatigue, liver problems	Condoms, (Hep. C rarely transmitted with intercourse)	Interferon in some cases and supportive care



# Questions

- 1) Most common STIs in KSA?
  - a. HIV
  - b. Chlamydia
  - c. Gonorrhoea
  - d. Syphilis
  
- 2) A patient went 3 days ago to one of the gulf countries. He complains of urethral discharge. What you expect:
  - a. HIV
  - b. Chlamydia
  - c. Gonorrhoea
  - d. Syphilis
  
- 3) Patient comes to you complaining of urinary frequency. When you examined her, you found Frothy yellowish vaginal discharge and strawberry cervix:
  - a. HIV
  - b. Trichomoniasis
  - c. Gonorrhoea
  - d. Syphilis

4) Which of the following is required to diagnose a patient with AIDS?

- a. A CD4 count of less than 200 cells/mm<sup>3</sup>
- b. A CD4 count of less than 1000 cells/mm<sup>3</sup>
- c. A CD4 count of less than 2000 cells/mm<sup>3</sup>
- d. A CD4 count of less than 100 cells/mm<sup>3</sup>

5) Which of the following HPV types is known to cause cervical cancer?

- a. HPV 6
- b. HPV 11
- c. HPV 16
- d. HPV 33

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**Answers:**

1st Questions: B

2nd Questions: C

3rd Questions: B

4th Questions: A

5th Questions: C