

**SES**  
**SIOT, KHARGHAR**  
**CIVIL DEPARTMENT**  
**ASSIGNMENT NO.1**

**SUBJECT: PHE**

**CLASS: T.Y**

- 1. Explain the importance and necessity of PHE.**
- 2. Draw a general layout of water treatment plant and explain the purpose of each component.**
- 3. Write down factors affecting per capita demand and variation of water demand.**
- 4. Estimate population of 2021 with following census report by**
  - a) Arithmetic increase method**
  - b) Geometric increase method**
  - c) Incremental increase method**

<b>Year</b>	<b>1961</b>	<b>1971</b>	<b>1981</b>	<b>1991</b>	<b>2001</b>
<b>Population</b>	<b>58000</b>	<b>63000</b>	<b>69000</b>	<b>71000</b>	<b>75000</b>

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**ASSIGNMENT NO.2**

**SUBJECT: PHE**

**CLASS: T.Y**

- 1. Enlist the surface and sub-surface sources of water.**
- 2. Explain the intake structure and its types.**
- 3. Explain**
  - a) Physical testing of water**
  - b) Chemical testing of water**
  - c) Biological testing of water**
- 4. Write a note on E-coli test and explain its significance.**
- 5. State significance of Ground Water Recharge and explain its types.**

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**ASSIGNMENT NO.3**

**SUBJECT: PHE**

**CLASS: T.Y**

- 1. Draw a flowchart of water treatment process.**
- 2. Explain with neat sketch rapid sand filter.**
- 3. Distinguish between Slow sand filter and Rapid sand filter.**
- 4. Explain breakpoint chlorination.**

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**ASSIGNMENT NO.4**

**SUBJECT: PHE**

**CLASS: T.Y**

- 1. Explain the necessity for treating domestic sewage.**
- 2. Explain the recycling and reuse of domestic waste.**
- 3. List sanitary fittings and mention the purpose of each.**
- 4. Distinguish between one pipe system and two pipe system of plumbing.**

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**ASSIGNMENT NO.5**

**SUBJECT: PHE**

**CLASS: T.Y**

- 1. Explain the manhole and its component parts.**
- 2. Explain working of septic tank with sketch.**
- 3. Draw a general layout and flow diagram for sewage treatment plant.**
- 4. Explain the activated sludge process.**

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**ASSIGNMENT NO.6**

**SUBJECT: PHE**

**CLASS: T.Y**

- 1. Explain the purpose of grit chamber and state its location.**
- 2. State and explain the types of sewers.**
- 3. Explain trickling filter with neat labelled diagram.**

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**ASSIGNMENT NO.7**

**SUBJECT: PHE**

**CLASS: T.Y**

- 1. Enlist the benefits of rain water harvesting.**
- 2. Draw line diagram of sanitary plumbing and sewage collection residential building.**

