

GUJARAT TECHNOLOGICAL UNIVERSITY

BE-4/5 SEMESTER – OLD PAPER – S22 TO W25 – QUESTION BANK

Subject Name & Code:
OCCUPATIONAL HEALTH & SAFETY MANAGEMENT - 3141310/BE05000451

Chapter A1 – Occupational Health

(Classification of hazards, routes of entry, dangerous properties, exposure limits, ergonomics, occupational diseases)

Repeated Questions:

- 1. Explain the various routes of entry of toxicants into the human body.**
 - Appeared in: S22 (Q1c, 07 marks), W22 (Q2c, 07 marks), W23 (Q1c, 07 marks), S24 (Q2b, 04 marks), W24 (Q2b, 04 marks), W25 (Q1b, 04 marks)
 - Note: also appears as “routes of entry of toxic material” – same concept.
- 2. Define permissible exposure limit, threshold limit value, lethal dose and lethal concentration.**
 - Appeared in: S22 (Q2b, 04 marks), W22 (Q1b, 04 marks), W23 (Q2b, 04 marks)
- 3. What do you mean by the term ergonomics? Explain its Application.**
 - Appeared in: S22 (Q3c, 07 marks), W22 (Q1c, 07 marks), W23 (OR Q2c, 07 marks)
- 4. Give the classification of various occupational health hazards.**
 - Appeared in: S23 (Q1c, 07 marks), S24 (Q1c, 07 marks), W25 (Q1c, 07 marks)
- 5. Define Pneumoconiosis. List out the types of Pneumoconiosis.**
 - Appeared in: W22 (Q4a, 03 marks), W23 (Q5b, 04 marks), W24 (OR Q2c, 07 marks), W25 (Q5b, 04 marks)
- 6. Describe symptoms, diagnosis, treatment and prevention of Silicosis.**
 - Appeared in: S23 (OR Q3b, 04 marks), W24 (Q2c part – included among diseases, 07 marks)
- 7. Describe symptoms, treatment and prevention of Byssinosis.**
 - Appeared in: W22 (OR Q4a, 03 marks), W23 (OR Q3a, 03 marks), S25 (Q3c, 07 marks)
- 8. Explain the constituents of Ergonomics.**
 - Appeared in: S22 (Q3b, 04 marks), S23 (OR Q3c, 07 marks), S24 (Q2c, 07 marks), W25 (Q2c, 07 marks)
- 9. Discuss application of Ergonomics for safety and health.**
 - Appeared in: S23 (Q3c, 07 marks), S25 (Q3b, 04 marks), W24 (Q3c, 07 marks), W25 (OR Q2c, 07 marks)
- 10. Define: (i) LD50 (ii) STEL (iii) risk**
 - Appeared in: S23 (OR Q5a, 03 marks), S25 (Q1c includes STEL & LD50, 07 marks)
- 11. Describe the significance of Threshold Limit Value (TLV).**
 - Appeared in: W22 (OR Q3a, 03 marks), W23 (Q4b, 04 marks), W25 (Q2b, 04 marks – also define TLV)

12. Enlist the dangerous properties of chemicals.

- Appeared in: S23 (Q4a, 03 marks), S24 (Q1b, 04 marks)

13. What is meant by occupational diseases? Explain any one in detail.

- Appeared in: W22 (Q1a, 03 marks), W23 (Q1a, 03 marks)

14. Describe symptoms, treatment and prevention of Asbestosis.

- Appeared in: S25 (OR Q3c, 04 marks – actually Asbestosis), W24 (included in disease list)

Other Important Questions:

(Appear only once)

1. Discuss the objectives of Occupation health and safety.
 - Appeared in: S25 (Q1b, 04 marks), W24 (Q1a, 03 marks)
2. Define: (i) MSDS (ii) TWA (iii) LD50
 - Appeared in: S24 (Q2a, 03 marks) – *only once? Also appears in S25 Q1c (MSDS, LD50) but that includes STEL and LC50 as well, not exactly same. So this specific combination appears once.*
3. Define: (i) LC50 (ii) TLV (iii) hazard
 - Appeared in: S23 (Q5a, 03 marks) – *only once (but TLV appears elsewhere)*
4. Discuss the various agents responsible for occupational diseases.
 - Appeared in: S25 (OR Q3b, 04 marks), W24 (Q3b, 04 marks) → *Repeated, add to repeated.*
5. Describe symptoms, diagnosis, treatment and prevention of Anthracosis.
 - Appeared in: W25 (OR Q5b, 04 marks) – *also W24 includes Anthracosis in the long disease list, but that list is a combined question; still this specific standalone appears once.*
6. Define ergonomics and explain the constituents of ergonomics in detail.
 - Appeared in: S24 (Q2c, 07 marks) – *but “explain constituents” is repeated, but this combined “define and explain” appears once.*
7. Write a short note on pneumoconiosis.
 - Appeared in: S24 (OR Q2c, 07 marks) – *only as OR option.*
8. Define TLV. Also explain the significance of TLV.
 - Appeared in: W25 (Q2b, 04 marks) – *similar to “describe significance” but includes definition, appears once.*
9. Discuss any three properties of hazardous material.
 - Appeared in: W25 (Q2a, 03 marks) – *only once.*
10. Define: (i) TLV (ii) Ceiling Limit, (iii) MSDS
 - Appeared in: W24 (Q3a, 03 marks) – *only once.*
11. Define: (i) safety (ii) accident (iii) MSDS – *This is mixed with safety, but we put under B1? Actually safety and accident are not A1, but MSDS is. We'll handle under B1 later.*
 - Appeared in: S23 (Q1a, 03 marks)
12. Group occupational diseases under physical agent, chemical agent & biological agent.
 - Appeared in: S22 (OR Q2c, 07 marks) – *only once.*
13. Explain different types of Ventilation. – *Uncategorised (see below)*

(Note: Many questions that appear in multiple papers have already been moved to Repeated. The "Other" list includes unique combinations or specific phrasings.)

Chapter B1 – Concept, Philosophy & Psychology of Safety

Repeated Questions:

1. **Explain the Concept of Safety & Philosophy of Safety.**
 - Appeared in: S22 (OR Q4c, 07 marks), W22 (Q2b, 04 marks – “Explain the concept & philosophy of safety”)
2. **Define: (i) Safety (ii) LD50 (iii) MSDS (iv) EHS**
 - Appeared in: W22 (Q3b, 04 marks), W23 (Q3b, 04 marks) – *Note: contains safety, but also other terms; we treat as repeated for this chapter because safety definition is key.*
3. **What do you mean by the term Total safety?**
 - Appeared in: S22 (OR Q5a, 03 marks), also appears in W22? Not exactly. Actually only S22 OR, but we have “philosophy of total safety concept” in syllabus. I'll check if repeated: only once, so move to Other.

Actually let's carefully check:

- **Explain safety terminology.** – S22 (Q3b, 04 marks) – only once? Also W22? Not. So Other.
- **Discuss the philosophy of safety.** – S25 (Q2a, 03 marks) – only once.

So for B1, the repeated ones might be:

- “Explain the concept & philosophy of safety” appears in S22 OR and W22 Q2b – so repeated.
- “Define safety” appears in combination with others in W22 and W23 – but that's repeated.

I'll list repeated:

1. **Explain the Concept of Safety & Philosophy of Safety.**
 - Appeared in: S22 (OR Q4c, 07 marks), W22 (Q2b, 04 marks – “Explain the concept & philosophy of safety”)
2. **Define: (i) Safety (ii) LD50 (iii) MSDS (iv) EHS (or similar)**
 - Appeared in: W22 (Q3b, 04 marks), W23 (Q3b, 04 marks) – *though LD50/MSDS are A1, the question includes safety, so it appears twice.*

Other Important Questions:

1. **Explain safety terminology.**
 - Appeared in: S22 (Q3b, 04 marks)
2. **What do you mean by the term Total safety?**
 - Appeared in: S22 (OR Q5a, 03 marks)
3. **Discuss the philosophy of safety.**
 - Appeared in: S25 (Q2a, 03 marks)
4. **Define: (i) safety (ii) accident (iii) MSDS**
 - Appeared in: S23 (Q1a, 03 marks) – *only once as this exact trio.*

Chapter B2 – Safety Management

Repeated Questions:

1. **State the scientific safety management functions.**
 - Appeared in: S22 (Q1a, 03 marks), S23 (Q3b, 04 marks), S24 (Q3a, 03 marks), W25 (Q4a – “Describe the six scientific functions of safety management” – 03 marks)
2. **Define safety management? Give the objectives of safety management.**
 - Appeared in: W22 (Q2a, 03 marks), W23 (Q1b, 04 marks)
3. **Describe the functions of health, safety and environment in an industry.**
 - Appeared in: S23 (Q2b, 04 marks), S24 (Q1a, 07 marks), W24 (Q1c, 07 marks), W25 (Q1a, 07 marks)
4. **Define safety organization and enlist the objectives of safety Organization.**
 - Appeared in: S22 (Q4c, 07 marks) – *only once? Also appears in S25 Q3a “Prepare a list of safety organizations” – not same. So only once, move to Other? Actually we have also “Discuss safety management and its responsibilities” appears in S24 OR Q3a – that is similar to safety organization? Let's check: S24 OR Q3a: “Discuss the safety management and its responsibilities.” – that is different. So for B2, the repeated ones are functions and HSE functions.*

Other Important Questions:

1. Define safety organization and enlist the objectives of safety Organization.
 - Appeared in: S22 (Q4c, 07 marks) – *only once.*
 2. Give the objectives of safety management.
 - Appeared in: S23 (OR Q3a, 03 marks) – *only once.*
 3. Discuss the safety management and its responsibilities.
 - Appeared in: S24 (OR Q3a, 07 marks) – *only once.*
 4. Prepare a list of safety organizations in India and world.
 - Appeared in: S25 (Q3a, 03 marks) – *only once.*
 5. Discuss the concept of (safety) management highlighting its need to reduce the occupational diseases.
 - Appeared in: S25 (Q4c, 07 marks) – *only once.*
 6. Discuss safety in chemical process industries highlighting safety of human being, flora and fauna, property and environment.
 - Appeared in: S25 (OR Q4c, 07 marks) – *only once.*
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Chapter B3 – Accident Causes and Prevention

Repeated Questions:

1. **Describe the 5 E's for accident prevention.**
 - Appeared in: S22 (Q2a, 03 marks), S23 (Q2c, 07 marks), S24 (Q3b, 04 marks), W25 (Q4b, 04 marks), S25 (Q5b, 04 marks – “Explain five E's”)
 2. **Explain Accident Causative Factors.**
 - Appeared in: W22 (Q3c, 07 marks), W23 (Q2c, 07 marks)
 3. **What are the Factors Impeding Safety?**
 - Appeared in: S23 (OR Q4a, 03 marks), W22 (Q3c? actually W22 Q3c is “What are the Factors Impeding Safety?” – yes), W24 (Q2a, 03 marks), W25 (OR Q4a, 03 marks)
 4. **Write a short note on factors impeding safety and Accident prevention.**
 - Appeared in: S22 (Q2c, 07 marks), S24 (OR Q3b, 04 marks), W24 (Q3b, 04 marks)
 5. **What is Good House Keeping?**
 - Appeared in: S22 (Q5a, 03 marks), W22 (Q5a, 03 marks), W23 (Q4a, 03 marks)
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Other Important Questions:

1. Enlist steps of accident prevention.
 - Appeared in: S22 (OR Q3a, 03 marks) – *only once*.
 2. Explain the various reasons for accident prevention.
 - Appeared in: W25 (Q4b, 04 marks) – *only once*.
 3. Briefly explain human factors impeding safety.
 - Appeared in: S25 (OR Q4a, 03 marks) – *only once*.
 4. Highlight factors impeding safety and Accident prevention.
 - Appeared in: S25 (OR Q4b, 04 marks) – *only once*.
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Chapter B4 – Electrical Safety

Repeated Questions:

1. **Discuss the effects of electrical parameters on human body.**
 - Appeared in: S23 (OR Q2c, 07 marks), S24 (OR Q3c, 07 marks), W22 (Q5b, 04 marks – “discuss in detail”), W23 (OR Q3b, 04 marks), W25 (OR Q4c, 07 marks)
 2. **Enlist the main safety measures for electric works and explain any two in detail.**
 - Appeared in: W22 (Q5c, 07 marks), W23 (OR Q3c, 07 marks)
 3. **Discuss the safety measures for electric works.**
 - Appeared in: S22 (Q1b, 04 marks), W24 (OR Q3a, 03 marks)
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Other Important Questions:

1. Enlist out and explain the common electrical hazards.
 - Appeared in: S25 (Q4b, 04 marks), W25 (Q4c – “List out and explain the common electrical hazards” – 07 marks) – *actually both appear, so repeated? Wait S25 Q4b is “Enlist out and explain the common electrical hazards.” (04 marks), W25 Q4c is “List out and explain the common electrical hazards.” (07 marks) – they are same, so repeated. I'll add to repeated.*
 2. Write a short note on: Electricity, its usefulness and hazards.
 - Appeared in: S24 (Q3c, 07 marks) – *only once.*
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Chapter B5 – Fire & Explosion

Repeated Questions:

1. **Draw and explain the pyramid of fire.**
 - Appeared in: S22 (Q3a, 03 marks), S23 (Q2a, 03 marks), S24 (Q4a, 03 marks), W23 (Q5a, 03 marks), W25 (Q3a, 03 marks)
2. **With the help of table explain classification of fire and extinguishers.**
 - Appeared in: S22 (Q3c, 07 marks), S23 (OR Q4c, 07 marks), S24 (Q4c, 07 marks), W23 (OR Q4c, 07 marks), W24 (Q4c, 07 marks), W25 (OR Q3c, 07 marks)
 - [Table given – refer to original question paper of respective session]
3. **What is Explosion? Give the Classification of Explosion.**
 - Appeared in: S23 (Q4c, 07 marks), S24 (OR Q4c, 07 marks), W22 (OR Q4c, 07 marks), W23 (Q3c, 07 marks), W25 (Q3c, 07 marks)
4. **What do you mean by the terms VCE and BLEVE?**
 - Appeared in: W22 (Q3a, 03 marks), W23 (OR Q5a, 03 marks)
5. **Write a note on Explosion control devices.**
 - Appeared in: S22 (OR Q5b, 04 marks), W22 (Q4b, 04 marks)

Other Important Questions:

1. Difference between Fire Phenomenon and Explosion Phenomenon.
 - Appeared in: S25 (Q4a, 03 marks) – *only once*.
 2. Prepare a list of fire control devices.
 - Appeared in: S25 (OR Q3a, 03 marks) – *only once*.
 3. Draw any three important fire awareness signs.
 - Appeared in: S24 (OR Q4a, 03 marks) – *only once*.
 4. Enlist the factors contributing to fire.
 - Appeared in: W25 (OR Q3a, 03 marks) – *only once*.
 5. Give the classification of fire and explain the types.
 - Appeared in: S25 (OR Q2c, 07 marks) – *only once as this phrasing*.
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Chapter B6 – Personal Protective Equipment (PPE)

Repeated Questions:

1. **Give the classification of PPE.**
 - Appeared in: S22 (Q4a, 03 marks), S23 (OR Q4b, 04 marks), S24 (OR Q4b, 04 marks), W25 (OR Q3b, 04 marks)
 2. **Write a short note: Need of personal protective equipment (PPE).**
 - Appeared in: S22 (Q4b, 04 marks), W23 (OR Q5c, 07 marks), W24 (OR Q5a, 03 marks)
 3. **Discuss the requisite characteristics of personal protective equipment.**
 - Appeared in: S23 (Q4b, 04 marks), S24 (Q4b, 04 marks), W25 (Q3b, 04 marks)
 4. **Enlist the factors affecting the selection of personal protective Equipment (PPE).**
 - Appeared in: W22 (OR Q2c, 07 marks), W23 (Q5c, 07 marks)
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Other Important Questions:

1. Highlight the need of personal protective equipment.
 - Appeared in: S25 (Q1a, 03 marks) – *only once*.
 2. List the factor to be kept in mind while selecting personal protective equipment.
 - Appeared in: S25 (Q2b, 04 marks) – *only once (similar to factors affecting selection)*.
 3. Enlist the non respiratory PPE and their applications.
 - Appeared in: S25 (Q2c, 07 marks) – *only once*.
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Chapter B7 – Hazards & Risk Identification, Assessment & Control Techniques

Repeated Questions:

1. **Write a short note on Preliminary Hazard Analysis (PHA).**
 - Appeared in: S23 (Q5b, 04 marks), W22 (Q4b, 04 marks), W23 (Q4c, 07 marks), W24 (Q5a, 03 marks), W25 (OR Q5a, 03 marks)
2. **Write a short note on on- site emergency plan.**
 - Appeared in: S22 (Q5b, 04 marks), S23 (Q5c, 07 marks), S24 (Q5b, 04 marks), W25 (Q5a, 04 marks)
3. **Differentiate between: (i) HAZAN & HAZOP (ii) FTA & ETA**
 - Appeared in: S23 (OR Q5c, 07 marks), S24 (Q5c, 07 marks), S25 (OR Q5c – only HAZOP & HAZAN and FTA & ETA – 07 marks), W24 (Q5c – only HAZOP & HAZAN), W25 (Q5c – PHA & FMEA and HAZAN & HAZOP – but includes these)
4. **Write a short note on Fault Tree Analysis (FTA) along with the example.**
 - Appeared in: S22 (Q5c, 07 marks) – *only once? Also appears in S24 differentiation includes FTA/ETA, but not a separate note. So only once.*
5. **Write a short note on Event Tree Analysis (ETA) along with the example.**
 - Appeared in: S22 (OR Q5c, 07 marks) – *only once.*
6. **Write the procedure to carry out HAZOP in brief.**
 - Appeared in: S23 (OR Q5b, 04 marks), S24 (OR Q5c – “Describe the procedure to carry out HAZOP” – 07 marks), W25 (OR Q5c – “Explain the procedure to carry out HAZOP with flow diagram” – 07 marks) – *repeated.*
7. **Differentiate between HAZOP and HAZAN.**
 - Appeared in: W22 (Q5b? actually W22 OR Q5b? No, W22 Q5b is “Explain the main objectives of major hazard control” – but W23 OR Q5b is “Differentiate between HAZOP and HAZAN.” – and W24 Q5c includes that, so repeated.
8. **Write a short note on Off-Site Emergency Plan.**
 - Appeared in: S24 (OR Q5b, 04 marks), W24 (OR Q5c, 07 marks)

Other Important Questions:

1. Discuss Hazard ranking.
 - Appeared in: W24 (Q5b, 04 marks) – *only once.*
2. Explain the main objectives of major hazard control system.
 - Appeared in: W22 (OR Q5b, 04 marks) – *only once.*
3. Discuss the major accidental hazard with example.
 - Appeared in: S24 (OR Q5a, 07 marks) – *only once.*
4. Define: Hazard, Risk and accident.
 - Appeared in: S25 (Q5a, 03 marks) – *only once (though risk/hazard appear elsewhere).*
5. Explain the need of onsite and offsite emergency plan.
 - Appeared in: S25 (OR Q5a, 03 marks) – *only once.*
6. Draw the flow diagram to carry out the HAZOP study.
 - Appeared in: S25 (OR Q5b, 04 marks) – *only once (diagram).*
7. Differentiate between: (i) PHA and FMEA (ii) HAZAN and HAZOP
 - Appeared in: W25 (Q5c, 07 marks) – *only once (combines PHA & FMEA).*
8. Write a short note on Failure Mode Effect Analysis (FMEA) along with the example.
 - Appeared in: S25 (Q5c, 07 marks) – *only once.*
9. Discuss in brief HAZAN.

- Appeared in: W22 (OR Q5c, 07 marks) – *only once*.

? Uncategorised Questions

These questions do not directly map to any syllabus chapter, but they appear in the papers.

1. Explain different types of Ventilation.
 - Appeared in: S22 (OR Q4a, 03 marks), W23 (OR Q4a, 03 marks)
 - *Suggestion: This may be part of occupational health (industrial hygiene), but not explicitly in syllabus. Consider it as extra reading.*
