NON-SLEW CRANE (CN)

VOC Study Guide

CERT LEVEL	QUESTIONS	SECTIONS	YEAR
Non-Slew Crane (CN)	**48**	**4**	**2025**

How to use this guide

This document is split into two parts. Part 1 contains all questions — use it to test yourself before looking at the answers. Write your responses in the space provided, or cover the answer pages and work through from memory.

Part 2 contains the full answer guide. Each question is repeated with its answer so you can use it as a learning reference before sitting your VOC assessment.

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PART 1 — QUESTIONS

Work through each question and write your answer in the space below, or test yourself from memory before checking Part 2.

SECTION 1 — CRANE SAFETY, LIFT PLANNING & SITE RULES

Q1. What should you do if personal situations are distracting you from your work?

Q2. Who is permitted to stop a lift?

Q3. What is the best way to identify hazards in the workplace during the pre-planning for a lift?

Q4. When must you participate in a pre-lift assessment?

Q5. When is it acceptable to lift the crane boom or load over personnel?

Q6. If directed, would you use the crane hook to drag or pull a load while the load is on the ground?

Q7. What would you do if you observed lightning or heard thunder while lifting?

Q8. What would you do if windy conditions made the object you were lifting difficult to control?

Q9. What hazard control strategies would need to be included in the plan for crane operations?

Q10. Are you permitted to allow a person to ride upon the lifting hook, sling attachment, or suspended load?

SECTION 2 — CRANE SETUP, OPERATION & LOAD CONTROL

Q11. What effect does a side slope have on the rated capacity of the crane?

Q12. What effect does increasing boom length have on the crane?

Q13. What is the effect on the rated capacity of cranes when articulated more than 10 degrees either side of centre?

Q14. How would you determine how close to a trench or embankment you are allowed to operate?

Q15. When taking the weight, how can you ensure that the rope is as close to vertical as possible?

Q16. How would you leave a crane parked up off the job?

Q17. How should the boom be left when a non-slewing crane is parked up?

Q18. What sort of ground is suitable for pick and carry operations?

Q19. If you have a Dogger escorting the crane on foot, where should he/she walk?

Q20. What is the minimum amount of rope that should be left on the winch drum when fully wound out?

Q21. When transferring a load from a crane hook to a chain block, how much side angle from the line of the boom would you allow?

Q22. Where would you find a crane's rated capacity for a particular boom length at a particular radius?

Q23. What cubic weight of water would you use to calculate the weight of a load?

Q24. What cubic weight of concrete would you use to calculate the weight of a load?

Q25. What cubic weight of steel would you use to calculate the weight of a load?

SECTION 3 — INSPECTION, MAINTENANCE & REJECTION OF LIFTING EQUIPMENT

Q26. What mechanical defects would you look for during an inspection before starting up the crane motor?

Q27. **Describe what structural defects you would look for during an inspection before starting up the crane motor?**

Q28. **When does the crane logbook need to be completed?**

Q29. **What is the maximum amount of wear permitted in the link of a lifting chain?**

Q30. **What will condemn flexible steel wire rope from safe use for lifting purposes?**

Q31. **What will condemn soft synthetic slings from safe use for lifting purposes?**

Q32. **When should slings be inspected?**

Q33. **What would you do with a defective sling?**

SECTION 4 — SLINGING METHODS, CALCULATIONS & LOAD HANDLING

Q34. **When a three-legged sling is used to lift a rigid load, how many legs are assumed to be taking the weight?**

Q35. **Before a round load is released, what would you do to stop it from rolling away?**

Q36. **Which is the safest method of slinging a load of pipes?**

Q37. **How do you determine the maximum angle of a four-legged sling?**

Q38. **In slinging a load, what action would you take to ensure the load was secure before hoisting it?**

Q39. **Which of the following formulas is correct for flexible steel wire rope SWL?**

Q40. **What method can you use to determine a 60 degree included angle between the sling legs?**

Q41. **Is it permissible to reeve a sling through two or more eyebolts?**

Q42. **Which is the correct method of using eyebolts with a two-legged sling configuration?**

Q43. **What type of shackle would you use for multiple slings?**

Q44. **What is the reduction in the SWL of a sling when choked around a round load?**

Q45. **Would you use an eyebolt to lift an electric motor?**

Q46. **What does a cubic metre of water weigh?**

Q47. **What does a cubic metre of concrete weigh?**

Q48. **What does a cubic metre of steel weigh?**

PART 2 — ANSWER GUIDE

Each question is repeated with its answer. Use this section as a learning reference to build your understanding before your VOC assessment.

SECTION 1 — CRANE SAFETY, LIFT PLANNING & SITE RULES

Q1. **What should you do if personal situations are distracting you from your work?**

A. Stop and discuss the issue with your supervisor.

Q2. **Who is permitted to stop a lift?**

A. Anyone can stop a lift.

Q3. **What is the best way to identify hazards in the workplace during the pre-planning for a lift?**

A. By using the pre-lift assessment.

Q4. **When must you participate in a pre-lift assessment?**

A. Before every lift.

Q5. **When is it acceptable to lift the crane boom or load over personnel?**

A. Never.

Q6. **If directed, would you use the crane hook to drag or pull a load while the load is on the ground?**

A. No — never under any circumstances.

Q7. **What would you do if you observed lightning or heard thunder while lifting?**

A. All lifting operations cease as soon as possible when the situation with the lift has been made safe.

Q8. **What would you do if windy conditions made the object you were lifting difficult to control?**

A. Cease the lifting operation as soon as possible when the lift has been made safe.

Q9. **What hazard control strategies would need to be included in the plan for crane operations?**

A. Any site hazards affecting safe operation, including: trenches and recently back-filled ground; poor ground conditions; other workgroups; traffic; poor lighting; powerlines; obstructions in the working radius; trees; scaffold; ladders; access and exit points.

Q10. **Are you permitted to allow a person to ride upon the lifting hook, sling attachment, or suspended load?**

A. No.

SECTION 2 — CRANE SETUP, OPERATION & LOAD CONTROL

Q11. **What effect does a side slope have on the rated capacity of the crane?**

A. It de-rates the capacity.

Q12. **What effect does increasing boom length have on the crane?**

A. It de-rates the capacity of the crane.

Q13. **What is the effect on the rated capacity of cranes when articulated more than 10 degrees either side of centre?**

A. The rated capacity is decreased.

Q14. **How would you determine how close to a trench or embankment you are allowed to operate?**

A. The formula is 1 to 1 — i.e. 1 m deep = 1 metre away from the edge of the trench or embankment.

Q15. **When taking the weight, how can you ensure that the rope is as close to vertical as possible?**

A. Have the Dogger/Rigger stand at 90 degrees to the boom in clear view of the operator to check.

Q16. **How would you leave a crane parked up off the job?**

A. As per manufacturer and site requirements.

Q17. **How should the boom be left when a non-slewing crane is parked up?**

A. As per manufacturer's specifications and site rules — usually raised high enough to avoid contact with other mobile plant, vehicles and personnel.

Q18. **What sort of ground is suitable for pick and carry operations?**

A. Firm, level, flat and smooth ground.

Q19. **If you have a Dogger escorting the crane on foot, where should he/she walk?**

A. Forward and to the side of the crane, out of its path and in full view of the crane operator.

Q20. **What is the minimum amount of rope that should be left on the winch drum when fully wound out?**

A. A minimum of three (3) full turns on the winch drum.

Q21. **When transferring a load from a crane hook to a chain block, how much side angle from the line of the boom would you allow?**

A. One (1) degree.

Q22. **Where would you find a crane's rated capacity for a particular boom length at a particular radius?**

A. The crane's load chart.

Q23. **What cubic weight of water would you use to calculate the weight of a load?**

A. 1 tonne per cubic metre.

Q24. **What cubic weight of concrete would you use to calculate the weight of a load?**

A. 2.4 tonnes per cubic metre.

Q25. **What cubic weight of steel would you use to calculate the weight of a load?**

A. 7.8 tonnes per cubic metre.

SECTION 3 — INSPECTION, MAINTENANCE & REJECTION OF LIFTING EQUIPMENT

Q26. **What mechanical defects would you look for during an inspection before starting up the crane motor?**

A. Structural damage; water and oil leaks; condition of V belts; water level; engine and hydraulic oil levels; loose wheel nuts; battery condition; rope condition.

Q27. **Describe what structural defects you would look for during an inspection before starting up the crane motor?**

A. Cracks around boom hinge points; cracks around slew pivot points; damage and cracks to the boom; cracks and damage to the slew and hinge points.

Q28. **When does the crane logbook need to be completed?**

A. Must be filled in every time it is used.

Q29. **What is the maximum amount of wear permitted in the link of a lifting chain?**

A. 10%.

Q30. **What will condemn flexible steel wire rope from safe use for lifting purposes?**

A. Any of: Discolouration from excessive heat; 10% of wires broken over a length of 8 × rope diameter; kinked; heat affected; crushed; knotted; stretches or locked; corroded; overloaded; acid/alkali affected; bird caging; high standing; cut or broken strands; twisted.

Q31. **What will condemn soft synthetic slings from safe use for lifting purposes?**

A. Any of: Acid and alkali affected; sun-rot; mildew; heat affected; effects of corrosive agents; overloading.

Q32. **When should slings be inspected?**

A. Before and after every use.

Q33. **What would you do with a defective sling?**

A. Tag out of service and separate from usable equipment.

SECTION 4 — SLINGING METHODS, CALCULATIONS & LOAD HANDLING

Q34. **When a three-legged sling is used to lift a rigid load, how many legs are assumed to be taking the weight?**

A. Two legs — any two legs must be capable of taking the full load.

Q35. **Before a round load is released, what would you do to stop it from rolling away?**

A. Chock it to prevent rolling.

Q36. **Which is the safest method of slinging a load of pipes?**

A. Double wrap two slings and reeve the eye.

Q37. **How do you determine the maximum angle of a four-legged sling?**

A. The greater of the angles between any opposite diagonal sling legs.

Q38. **In slinging a load, what action would you take to ensure the load was secure before hoisting it?**

A. Conduct a test lift — raise the load marginally off the ground and check that all slinging is tightly secured.

Q39. **Which of the following formulas is correct for flexible steel wire rope SWL?**

A. Diameter × Diameter × 8 = SWL.

Q40. **What method can you use to determine a 60 degree included angle between the sling legs?**

A. The length of each sling leg equals the distance between the two lifting points (equilateral triangle).

Q41. **Is it permissible to reeve a sling through two or more eyebolts?**

A. No.

Q42. **Which is the correct method of using eyebolts with a two-legged sling configuration?**

A. Configuration C is correct — slings connected directly to collared eyebolts with legs spread at an appropriate angle (refer to diagram in your study materials).

Q43. **What type of shackle would you use for multiple slings?**

A. Bow shackle.

Q44. **What is the reduction in the SWL of a sling when choked around a round load?**

A. 25% reduction.

Q45. **Would you use an eyebolt to lift an electric motor?**

A. No — unless specifically rated and approved by the manufacturer for lifting that motor.

Q46. **What does a cubic metre of water weigh?**

A. 1 tonne.

Q47. **What does a cubic metre of concrete weigh?**

A. 2.4 tonnes.

Q48. **What does a cubic metre of steel weigh?**

A. 7.8 tonnes.