



CONSTRUCTION
INDUSTRY COUNCIL
建造業議會

Plant and Equipment Operator (Bored Pile) Intermediate Trade Test Mock Written Test Paper

此文件關於機械設備操作工（鑽孔樁）工藝測試考題有需要索取此文件的中文版本，請致電 2100 9232 與工藝測試中心聯絡。

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A. Tools and Equipment

1. Which power type listed below is not for the general vibro hammer?

- (a) Hydraulic
- (b) Diesel
- (c) Electrical
- (d) Action and reaction

2. Please indicate the correct name of the piling tool shown in the drawing?

- (a) Grab
- (b) Hammer garb
- (c) Enlarged pile base machine (Bellout tool)
- (d) The above 3 items are all not correct



3. Which machine listed below is not classified as piling plant?

- (a) Crane
- (b) Vibro hammer
- (c) Oscillator
- (d) Theodolite

4. During the excavation of reverse circulation drill (RCD), how to determine the excavated depth?

- (a) Operator's judgment
- (b) The sum of all drill rods and the length of drill bit
- (c) Estimation from excavated duration
- (d) The noise generated from the RCD excavation can be used to estimate the depth

5. During the excavation of chisel and grab, how to estimate the excavated depth?
- (a) Measurement by weighted tape
 - (b) Length of wire rope
 - (c) The above 'a' & 'b' are correct
 - (d) The above 'a' & 'b' are incorrect
6. Which one of the following methods is not appropriate for rock excavation:-
- (a) Chiselling
 - (b) Excavation by drill bit
 - (c) Use of reverse circulation drill (RCD)
 - (d) Use of breaker (compressed air type) by labour at the bottom of pile

B Trade Knowledge

7. How to unhook a wire rope at high level ?
- (a) Use of any tools are easily to get on site
 - (b) Use of examined and in safety condition lifting man cage
 - (c) Standing on the lifting hook directly to increase working efficiency
 - (d) Creeping via casing by the most qualified labour
8. How to determine the use of oscillator or vibro hammer?
- (a) To be judged by experience
 - (b) Use vibro hammer as the first priority
 - (c) Based on the geological information from pre-drilling log and budget etc. and determined by head office.
 - (d) Choose the most powerful or the one with good condition

9. When the casing is jammed, what will happen to the oscillator?
- (a) Revolution of power pack decreases and sounds low and deep
 - (b) Hydraulic pressure increases
 - (c) Tail movement happens
 - (d) All are correct
10. How to prevent jamming at casing?
- (a) Use smooth surfaced new casing
 - (b) Lubricate the casing by pouring in large quantity of water into the casing
 - (c) Oscillate the casing below ground as soon as possible to avoid jamming of casing before concreting.
 - (d) Oscillate the casing below ground by an appropriate speed and drive up and down the casing occasionally.
11. Which machine listed below is equipped with reverse circulation drill (RCD)?
- (a) Diesel type power pack
 - (b) Electrical type power pack
 - (c) Air compressor
 - (d) Air compressor and hydraulic type power pack
12. If the casing cannot be extracted by oscillator, can the vibro hammer be used?
- (a) Yes, two machines have the same function
 - (b) Yes, the vibro hammer can adjust different size for casing's diameters
 - (c) No, the casing joint will be damaged.
 - (d) No, the casing used for oscillator has poor quality.

C Specification

13. When reinforcement cage is lifted into the pile shaft, what can we do?
- (a) Lift the chisel to the highest point and hit the boulder
 - (b) Lift up the chisel around a few hundreds, hit the boulder to be relocated then grab out the boulder
 - (c) Hit the casing with chisel, the boulder will be broken by the casing
 - (d) Lubricate the boulder by pouring in muddy water, then break the boulder with chisel
14. What is the termination depth of a pile?
- (a) A pile is excavated to the specified design depth
 - (b) Down to rock head level
 - (c) Piling operative's judgment based on his/her experience
 - (d) All are incorrect
15. Which diameter of piles listed below is not a common pile size?
- (a) 2500mm
 - (b) 2000mm
 - (c) 1000mm
 - (d) 400mm
16. Pile in Hong Kong is penetrated into?
- (a) Soil layer
 - (b) Boulder
 - (c) Rock head
 - (d) To be determined by Engineer

17. Who can assist to retrieve a chisel left at the bottom of pile?
- (a) Resident Engineer
 - (b) Safety Officer
 - (c) Rigger
 - (d) Qualified diver
18. Cleaning pile base by bentonite is more expensive than fresh water. How to choose?
- (a) Contract requirement
 - (b) Because there is no fresh water supply on site
 - (c) No discharge point for the untreated water
 - (d) Bentonite is better than fresh water. It reduces the construction period. Supervisory routine can be arranged effectively. Effectiveness increases.

D. Lifting Operation Hand signal

19. During crane lifting operation, what does the hand signal mean in the picture ?
- (a) raising the hook
 - (b) using the main hook
 - (c) lower the hook slowly
 - (d) raising the hook slowly



20. During crane lifting operation, what does the hand signal mean in the picture ?
- (a) raising the hook
 - (b) lowering the hook
 - (c) lower the hook slowly
 - (d) raise the hook slowly



21. During crane lifting operation, what does the hand signal mean in the picture ?

- (a) take a rest
- (b) stop immediately
- (c) ready to start
- (d) raising the crane jib



22. During crane lifting operation, what does the hand signal mean in the picture ?

- (a) take a rest
- (b) stop immediately
- (c) forward drive
- (d) ready to start the crane



23. During crane lifting operation, what does the hand signal mean in the picture ?

- (a) forward drive
- (b) backward drive
- (c) stop
- (d) slowly



24. During crane lifting operation, what does the hand signal mean in the picture ?

- (a) well done
- (b) raising crane jib
- (c) watching left side
- (d) completion



25. During crane lifting operation, what does the hand signal mean in the picture ?

- (a) careful high-altitude object
- (b) raising crane jib slowly
- (c) raising the cargo slowly
- (d) will be rainy



26. During crane lifting operation, what does the hand signal mean in the picture ?

- (a) careful low level object
- (b) Slow down crane jib
- (c) the hook lay down on the ground
- (d) the hook lay down on the cargo



27. During crane lifting operation, what does the hand signal mean in the picture ?

- (a) lower the hook
- (b) lower the hook slowly
- (c) the hook lay down on the ground
- (d) careful ground object



28. During crane lifting operation, what does the hand signal mean in the picture ?

- (a) speed up raising the hook
- (b) take care on high level
- (c) raise the hook slowly
- (d) have a barrier on the cargo



29. During crane lifting operation, what does the hand signal mean in the picture ?

- (a) lower the hook
- (b) start your works
- (c) lunch hour
- (d) the work is done



E. Safety knowledge

30. When printed SWL 5 Ton, what is the weight the crane lifting machinery can lift?

- (a) 5 tons
- (b) 5 tons or less
- (c) 5 tons self weight
- (d) All above wrong

31. When the piles were connected to the welding process, and other workers were working on site, which one of the following measures should be taken to avoid harming them?

- (a) to place warning signs to be vigilant
- (b) placing warning signs, and required to work area to barriers
- (c) provide glasses to workers for protection purpose
- (d) all staff must leave the site, pending the completion of welding process to re-enter

32. When the slings are used for lifting onsite, who is qualified to issue the test certificate to officers for the operation.

- (a) the crane operator
- (b) site Safety Supervisor
- (c) the eligible person Registered Professional Engineer (RPE)
- (d) Site Manager

33. What qualification must the crane operator hold to operate crane machine ?
- (a) The crane operator must have received strict training in the older generation of masters
 - (b) The crane operator responsible for the lifting should have completed the training. He should have taken the test and licensed for operation of lifting appliances
 - (c) He should be sent by the respective companies for training provided by the senior operator
 - (d) All above are true
34. For slinging steel wire, how long the certificate should be valid:
- (a) 1 month
 - (b) 3 months
 - (c) 6 months
 - (d) 12 months
35. When using the wheel cutting machine to cut metal, we should wear:
- (a) cotton gloves
 - (b) protective goggles
 - (c) long-barreled boots
 - (d) cloth cap
36. Which one of the following facilities is not required by the Construction Sites (Safety) Regulations:-
- (a) adequate and appropriate lighting equipment
 - (b) use of fire materials take the locker room
 - (c) good and escape routes free from obstruction
 - (d) a comprehensive fence installed to prevent workers from falling into water

37. Which of the following heights above ground is defined at the legislation for working at height?
- (a) 1 M
 - (b) 1.5 M
 - (c) 2 M
 - (d) 2.5 M
38. If the worker is carrying a heavy load objects, which part of the body can easily be injured if the lifting posture is not correct?
- (a) neck
 - (b) waist
 - (c) leg
 - (d) arm
39. If you cannot avoid "manual handling", you should try to improve. For example: to reduce the number and range extension, or removal. Which of the following approaches can these methods be summarized?
- (a) re-design of load
 - (b) re-design process
 - (c) improve the working environment
 - (d) prolonged working hours, higher wages
40. What is the minimum thickness of the timber board for laying working platform?
- (a) 20mm
 - (b) 25mm
 - (c) 30mm
 - (d) 40mm