



CONSTRUCTION  
INDUSTRY COUNCIL  
建造業議會

# **Plant and Equipment Operator (Percussive Pile) Intermediate Trade Test Mock Written Test Paper**

此文件關於打機械設備操作中工( 撞擊式樁 )工藝測試考題。如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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Plant and Equipment Operator (Percussive Pile) Intermediate Trade Test  
Knowledge Test

Candidate's Name (Chinese): \_\_\_\_\_

Candidate No. : \_\_\_\_\_

HK ID No. : \_\_\_\_\_

Test Date : \_\_\_\_\_Y\_\_\_\_\_M\_\_\_\_\_D

Time Limit : 60 minutes

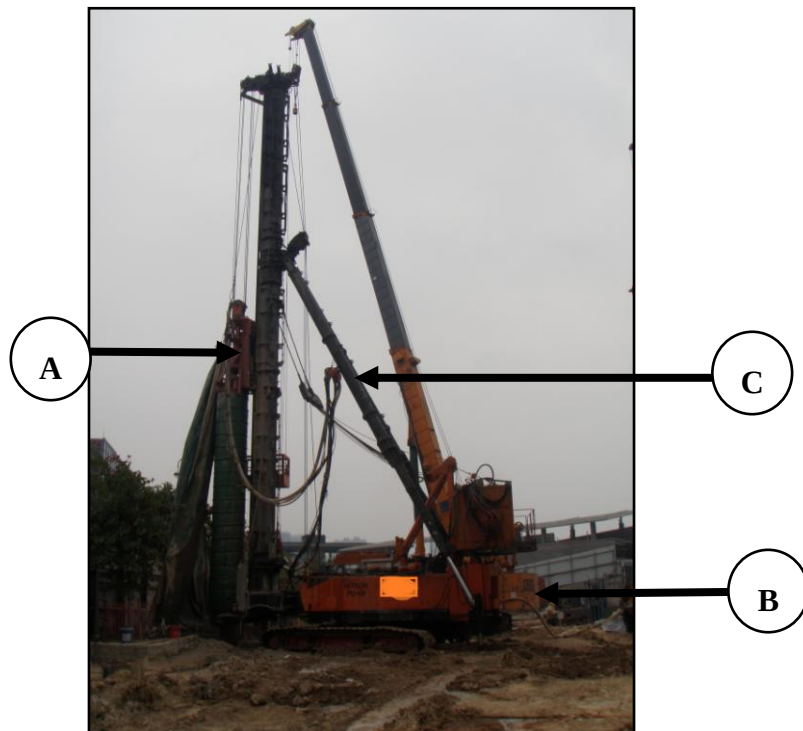
Notes to Candidates:

Please tick in the box next to the most suitable answer of the question (☑).

A Tools and Equipment

1. Which of the following is not the power to drive the vibration hammer (震動樁錘)?

- (a) Hydraulic driven
- (b) Diesel driven
- (c) Electricity driven
- (d) Reaction driven

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**Figure (1)**

2. Please select the correct name of Part “A” of the piling machine in Figure (1).

- (a) Percussive hammer (落擊樁錘)
- (b) Rear rudder (尾舵)
- (c) Leader (導架)
- (d) Adjustable bracing (調整扶撐)

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3. Please select the correct name of Part “B” of the piling machine in Figure (1).
- (a) Percussive hammer (落擊樁錘) ☐
  - (b) Rear rudder (尾舵) ☐
  - (c) Leader (導架) ☐
  - (d) Adjustable bracing (調整扶撐) ☐
4. Please select the correct name of Part “C” of the piling machine in Figure (1).
- (a) Percussive hammer (落擊樁錘) ☐
  - (b) Rear rudder (尾舵) ☐
  - (c) Leader (導架) ☐
  - (d) Adjustable bracing (調整扶撐) ☐
5. When piling starts, what type of hammer should be used for positioning?
- (a) Heavy hammer (重錘) ☐
  - (b) Light hammer (輕錘) ☐
  - (c) Vibration hammer (震錘) ☐
  - (d) No specific category ☐
6. When piling will soon complete, what type of hammer is used for the final set?
- (a) Heavy hammer (重錘) ☐
  - (b) Light hammer (輕錘) ☐
  - (c) Vibration hammer (震錘) ☐
  - (d) No specific category ☐

B            Trade Knowledge

7.            What must be noted when lifting heavy load?
- (i)    The set up position of the crane
  - (ii)   The distance between the lifting point and the crane
  - (iii)   Inclination of the boom
  - (iv)   Mindful of the overload alarm
- (a)   (i) and (ii) ☐
- (b)   (iii) ☐
- (c)   All of the above ☐
- (d)   None of the above ☐
8.            If it is necessary to lift a 4 m<sup>3</sup> concrete brick, what is the estimated weight?
- (a)   2 ~ 4 tons ☐
- (b)   5 ~ 7 tons ☐
- (c)   8 ~ 10 tons ☐
- (d)   11 ~ 14 tons ☐
9.            How do you release wire at height?
- (a)   Choose convenient work appliance at will ☐
- (b)   Stand inside a man cage (吊人籠) complying with safety specifications ☐
- (c)   Stand directly on the hoist to enhance efficiency ☐
- (d)   The most agile colleague should be asked to climb up and release the wire ☐

10. The driving direction of H-pile during piling should be:
- (a) According to the designed direction of the plan ☐
  - (b) No fixed direction but must be different from the adjacent H-pile ☐
  - (c) No fixed direction, to be decided by the worker ☐
  - (d) None of the above ☐
11. The distance between each H-pile is:
- (a) At least 10 m ☐
  - (b) At least 5 m ☐
  - (c) No specification ☐
  - (d) Must comply with the designed specifications of the plan ☐
12. Which of the following phenomenon is incorrect when the H-pile is driven to the rock stratum?
- (a) The sinking speed of the H-pile slows down ☐
  - (b) The pile hammer is jumping ☐
  - (c) The percussion noise becomes louder ☐
  - (d) The percussion noise becomes quieter ☐

C Construction Specifications

13. The general joining method of H-pile is:
- (a) Electric arc welding ☐
  - (b) Interlocking by screw and bolt (絲栓互扣) ☐
  - (c) The H-piles have sufficient overlapping ☐
  - (d) All of the above ☐
14. Can driving continue if the penetration speed of the pile increases or decreases suddenly during percussion piling process?
- (a) Yes, must speed up to complete ☐
  - (b) Yes, must inform the engineer or supervisor afterwards ☐
  - (c) No, must inform the mechanic to inspect ☐
  - (d) No, must immediately inform the engineer or supervisor ☐

15. When percussion piling begins, you should:
- (a) Raise the hammer as high as possible and strike the H-pile with the most vigorous force ☐
  - (b) Slightly raise the hammer, strike the H-pile to fix the position ☐
  - (c) Drive as fast as possible without delay in working hours ☐
  - (d) No fixed standard ☐
16. Is there any limitation on the number of H-pile machines on site?
- (a) No ☐
  - (b) Depends on the quantity owned by the company ☐
  - (c) Depends on the size of the site ☐
  - (d) Depends on the requirements of the Environmental Protection Department ☐
17. How do you calculate the depth of the H-pile going underground?
- (a) Memorize the numbers of H-piles being driven to measure ☐
  - (b) Use the length marked on the H-pile ☐
  - (c) Use a ruler to measure and calculate the depth ☐
  - (d) Can estimate by the penetration speed of the H-pile ☐
18. Is there any specification for the heavy hammer (重錘) in the final set?
- (a) The brand of hammer must be supplied by an authorized vendor ☐
  - (b) The hammer must be pre-approved by the engineer ☐
  - (c) The hammer must be brand new and used for the first time ☐
  - (d) The hammer must be painted with a special colour ☐

D Hand Signals in Plant Operation

19. The hand signal given by the person in the diagram during crane operation is:



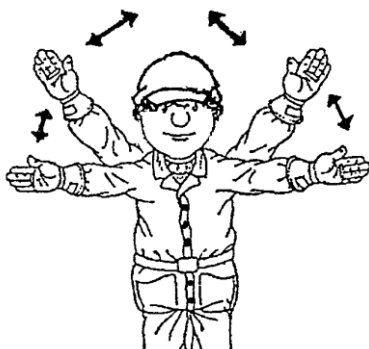
- |     |                    |                          |
|-----|--------------------|--------------------------|
| (a) | Raise hoist        | <input type="checkbox"/> |
| (b) | Use main hoist     | <input type="checkbox"/> |
| (c) | Lower hoist slowly | <input type="checkbox"/> |
| (d) | Raise hoist slowly | <input type="checkbox"/> |

20. The hand signal given by the person in the diagram during crane operation is:



- |     |                    |                          |
|-----|--------------------|--------------------------|
| (a) | Raise hoist        | <input type="checkbox"/> |
| (b) | Lower hoist        | <input type="checkbox"/> |
| (c) | Lower hoist slowly | <input type="checkbox"/> |
| (d) | Raise hoist slowly | <input type="checkbox"/> |

21. The hand signal given by the person in the diagram during crane operation is:



- |     |                 |                          |
|-----|-----------------|--------------------------|
| (a) | Stop everything | <input type="checkbox"/> |
| (b) | Emergency stop  | <input type="checkbox"/> |
| (c) | Travel          | <input type="checkbox"/> |
| (d) | Raise boom      | <input type="checkbox"/> |

22. The hand signal given by the person in the diagram during crane operation is:



- (a) Stop everything
- (b) Emergency stop
- (c) Travel from me
- (d) Travel

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23. The hand signal given by the person in the diagram during crane operation is:



- (a) Travel to me
- (b) Travel from me
- (c) Stop
- (d) Travel slowly

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24. The hand signal given by the person in the diagram during crane operation is:



- (a) Swing the load to the right
- (b) The load is on your right
- (c) Swing to the left
- (d) Swing to the right

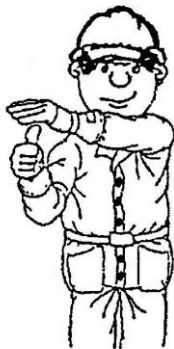
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25. The hand signal given by the person in the diagram during crane operation is:



- (a) Well done ☐
- (b) Raise boom ☐
- (c) Please look to the left ☐
- (d) Complete ☐

26. The hand signal given by the person in the diagram during crane operation is:



- (a) Beware of object at height ☐
- (b) Raise boom slowly ☐
- (c) Raise load slowly ☐
- (d) It's going to rain ☐

27. The hand signal given by the person in the diagram during crane operation is:



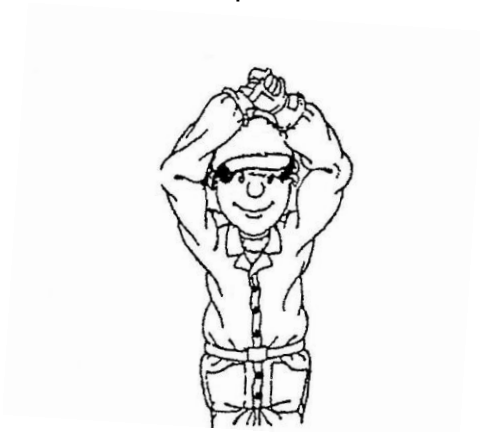
- (a) Doing better and better ☐
- (b) Raise the boom and lower the load ☐
- (c) Lower the boom and raise the load ☐
- (d) The higher the better ☐

28. The hand signal given by the person in the diagram during crane operation is:



- (a) Lower hoist ☐
- (b) Lower hoist slowly ☐
- (c) Put the load on the ground ☐
- (d) Beware of object on the ground ☐

29. The hand signal given by the person in the diagram during crane operation is:



- (a) Lower hoist ☐
- (b) Start working immediately ☐
- (c) Time to eat ☐
- (d) Stop everything ☐

E Safety Knowledge

30. In general, lifting appliances should be inspected every:

- (a) 4 months ☐
- (b) 5 months ☐
- (c) 6 months ☐
- (d) 7 months ☐

31. When conducting welding process to join piles and there are other persons at the scene, which of the following measures should be taken to avoid injuring others?
- (a) Place warning notice to alert them ☐
  - (b) Place warning notice and set up barriers surrounding the site ☐
  - (c) Order all persons at the scene to wear protective goggles ☐
  - (d) All personnel on site must leave and re-enter after the welding process is completed ☐
32. What qualifications must crane operators possess before operating lifting appliances?
- (a) Having received stringent training by old masters ☐
  - (b) Crane operators must complete recognized training in lifting appliances operation and pass the test and hold valid licence before they can operate lifting appliances ☐
  - (c) Training provided by senior operator of the company ☐
  - (d) All of the above ☐
33. All lifting appliances must be inspected weekly and what form must be completed before they can be put to use?
- (a) Lifting appliances must be inspected weekly and a "Safe Operation" report be made by completing "Form 1" before they can be put to use ☐
  - (b) Lifting appliances must be inspected weekly and a "Safe Operation" report be made by completing "Form 2" before they can be put to use ☐
  - (c) Lifting appliances must be inspected weekly and a "Safe Operation" report be made by completing "Form 3" before they can be put to use ☐
  - (d) Lifting appliances must be inspected weekly and a "Safe Operation" report be made by completing "Form 5" before they can be put to use ☐

34. The validity of certificate of wires for lifting is:
- (a) 1 month ☐
  - (b) 3 months ☐
  - (c) 6 months ☐
  - (d) 12 months ☐
35. The major purpose of "Site Safety Talks" is:
- (a) To provide refreshment to entertain the workers ☐
  - (b) A routine to fill up working hours ☐
  - (c) To report and discuss work progress ☐
  - (d) To regularly inculcate safety knowledge into workers ☐
36. Which of the following method should be adopted when workers move heavy loads?
- (a) Try to move more each time to complete the work faster ☐
  - (b) Adopt correct posture keeping the back as straight as possible ☐
  - (c) Toss the load up the rack as much as possible to train up the body ☐
  - (d) Take a deep breath, yell and lift the load ☐
37. Which part of the body will easily get injured if workers adopt wrong lifting posture when moving heavy loads?
- (a) Neck ☐
  - (b) Waist ☐
  - (c) Calf ☐
  - (d) Arm ☐
38. Improvement should be made if "manual lifting" cannot be avoided, e.g. reduce stretching or the times and distance of moving. These methods can be summarized to which of the following ways of handling?
- (a) Re-design the load ☐
  - (b) Re-design the work process ☐
  - (c) Improve the working environment ☐
  - (d) Drag on the working hours and increase the pay ☐

39. Why workers should not wear cotton gloves when operating machines with rotating parts?
- (a) Cotton gloves will absorb oil ☐
  - (b) Cotton gloves will be damaged ☐
  - (c) Cotton gloves will be entangled in the rotating parts of the machine ☐
  - (d) Cotton gloves will easily cause skin allergy ☐
40. The minimum thickness of planks laid on the working platform of construction scaffold is:
- (a) 20 mm ☐
  - (b) 25 mm ☐
  - (c) 30 mm ☐
  - (d) 40 mm ☐

- End of Paper -