

Heavy Equipment Technician IP Red Seal Practice Exam

1. What is SWL?
 - a. Single weight of load
 - b. Second weakest location
 - c. Working load limit
 - d. Abbreviation for swivel

2. What is the relation to breaking strength of rigging to determine the Working load limit?
 - a. Diameter of wire rope used
 - b. Width of fiber sling used
 - c. Safety factor based on purpose
 - d. All of the above

3. What sling configuration provides double the rigging capacity?
 - a. Vertical hitch
 - b. Choker hitch
 - c. Basket hitch
 - d. Wrapped hitch

4. What sling configuration reduces your slings capacity by 25%?
 - a. Vertical hitch
 - b. Choker hitch
 - c. Basket hitch
 - d. Wrapped hitch

5. When choking a load using a shackle in the eye you must ensure
 - a. The bow of the shackle is in the eye of your rigging
 - b. The pin of your shackle is in the eye of your rigging
 - c. The pin of your shackle is on the running end of your rigging

d. The pin of your shackle must be locked when in use

6. Properly installed U-Bolt clips retain approximately what strength of your wire rope?

a. 50%

b. 70%

c. 80%

d. 90%

7. Zink Spelter socket retains how much of your ropes strength?

a. 70%

b. 80%

c. 90%

d. 100%

8. Running your wire rope over a sharp bend can reduce the ropes strength by what percent?

a. 50%

b. 40%

c. 30%

d. 20%

9. Hand splicing an eye in wire rope can retain what strength for pulling with?

a. 25%

b. 45%

c. 65%

d. 85%

10. The safety factor associated with wire rope for general rigging is

a. 4:1

b. 5:1

- c. 6-8:1
- d. 10:1

11. The safety factor associated when hoisting personnel is

- a. 5:1
- b. 6-8:1
- c. 10:1
- d. 20:1

12. What do I need on my material in order to be able to lift with a vertical hitch?

- a. Multiple pick points
- b. Shackle
- c. Eye bolt
- d. Softeners

13. What would be an appropriate sling configuration for a smooth load using a 2 leg bridle?

- a. Choker hitch
- b. Vertical hitch
- c. Basket hitch
- d. Double wrapped choker

14. When rigging with multiple legs what sling angle is most preferable?

- a. 180 degrees
- b. 90 degrees
- c. 60 degrees
- d. 45 degrees

15. What sling angle requires being cautioned as critical?

- a. 90 degrees

- b. 60 degrees
- c. 45 degrees
- d. 30 degrees

16. Approximately how much tension is each leg of a 2-leg bridle experiencing when lifting a 2000lb load with a 30 degree angle?

- a. 500lbs
- b. 1000lbs
- c. 1500lbs
- d. 2000lbs

17. What is the main purpose of a snatch block

- a. To create mechanical advantage
- b. To hoist smaller loads
- c. To change direction of line
- d. To aid in crane operations

18. Properly installed wedge sockets will retain how much of your ropes strength?

- a. 50%
- b. 70%
- c. 80%
- d. 100%

19. Using a reeved block and tackle with 9 parts of line what is your mechanical advantage?

- a. 3:1
- b. 4.5:1
- c. 9:1
- d. 18:1

20. On a 9 part system how many sheaves would you use?

- a. 1
- b. 2
- c. 8
- d. 9

21. Using a 9 part system to hoist the load 5 feet, how many feet would I have to pull through my blocks?

- a. 5
- b. 9
- c. 10
- d. 45

22. Using a 9 part block and tackle system, how much force would be required in order to hold a 4000lb load stationary from my lead line?

- a. 4000lbs
- b. 444lbs
- c. 889lbs
- d. 211lbs

23. What is wire rope made from?

- a. Improved rope steel
- b. Alloy wire rope steel
- c. Improved plow steel
- d. Improved Warrington steel

24. Compared to regular lay wire rope, lang lay wire rope would have:

- a. More abrasion resistance
- b. Less abrasion resistance
- c. Less flexibility
- d. Less tendency to rotate

25. What does pre-formed wire rope refer to?

- a. Rope made from individual wires with an oval cross section
- b. Rope pre-formed with a curve for a better fit on the drum
- c. Rope made from individual wires formed into a helix before twisting into rope
- d. Rope with a special cross section to fit an elliptical sheave

26. When over winding a right lay rope, the rope would:

- a. Wind over the drum, starting on the left side
- b. Wind under the drum, starting from the left side
- c. Wind over the drum, starting on the right side
- d. Wind under the drum, starting on the right side

27. An IWRC wire rope would have:

- a. An inner wound rope core
- b. An indelible wax coating for resistance to corrosion
- c. An independent wire rope core
- d. An independent wire round cover

28. What is the accepted safety factor for general rigging?

- a. 2:1
- b. 3:1
- c. 5:1
- d. 10:1

29. The recommended eye type for wire rope slings is a:

- a. Tucked eye with pressed metal sleeve
- b. Fold back eye with pressed metal sleeve
- c. Clipped eye
- d. Flemish eye with pressed metal sleeve

30. What is the recommended angle for hoisting with bridle slings?

- a. 30 degrees
- b. 45 degrees
- c. 60 degrees
- d. 90 degrees

Answer Key

1. C
2. C
3. C
4. B
5. B
6. C
7. D
8. A
9. D
10. B
11. C
12. C
13. D
14. C
15. D
16. D
17. C
18. B
19. C
20. D
21. D
22. B
23. C
24. A
25. C
26. A
27. C
28. C
29. A
30. C