Name (print): ______________________________  Date: __________  Score: _____
Signature: _________________________________

Each question is worth 1 point unless otherwise noted. A passing score is 52 out of a possible 65. Return the completed quiz to Karen Kiselycznyk (safety_training@lle.rochester.edu, Rm. 2212).

1) If an activity seems unsafe
   a) Address the concern after the job is done
   b) The system must be safe since it is at LLE
   c) I just haven’t been trained yet
   d) Stop work and address the concern

2) Only perform activities for which you are qualified
   a) True
   b) False

3) Qualification for the use of overhead cranes requires additional training starting at;
   a) 0 lbs
   b) 120 lbs
   c) 500 lbs
   d) 20000 lbs

4) Basic rigging training is required starting at a payload weight of
   a) 0 lbs
   b) 120 lbs
   c) 500 lbs
   d) 20000 lbs

5) Advanced rigging training is required starting at a payload weight of
   a) 0 lbs
   b) 120 lbs
   c) 500 lbs
   d) 20000 lbs

6) What is the correct order of execution of the items listed below? (7pts)
   a) Attach payload to a load hook
   b) Attach the rigging gear
   c) Prep work
   d) Move the payload
   e) Remove the rigging gear
   f) Secure the payload
   g) Detach the payload from a hook

7) It is acceptable to slightly exceed load ratings because the safety factors are so high.
   a) True
   b) False

8) Rated and non-rated rigging hardware are interchangeable for overhead hoisting.
   a) True
   b) False
9) Rigging equipment needs to be visually inspected prior to every use.
   a) True  b) False

10) Slings without labels are acceptable to use.
    a) True  b) False

11) It is acceptable to tie slings together.
    a) True  b) False

12) What type of sling damage is cause for removing a sling from service?
    a) Burn (heat)  b) Chemical  c) Snags, punctures, tears or cuts  d) Broken or worn stitches  e) Abrasion  f) Shock loading  g) All of the above

13) Use of softeners is required on sharp corners.
    a) True  b) False

14) How many degrees of freedom do hoist rings have?
    a) 1  b) 2  c) 3  d) 4

15) What tool(s) is/are required to install a hoist ring?
    a) Allen wrench  b) Torque wrench  c) All of above

16) For a hoist ring, a thread engagement into steel equal to the bolt diameter is acceptable.
    a) True  b) False

17) Same size alloy and stainless steel hoist rings are interchangeable.
    a) True  b) False

18) For a vertical pull, comparably rated machinery eye bolts and hoist rings are interchangeable.
    a) True  b) False

19) For a non-vertical pull, comparably rated machinery eye bolts and hoist rings are interchangeable.
    a) True  b) False

20) Thread engagement into steel equal to the bolt diameter of an eye bolt is acceptable.
    a) True  b) False

21) The load rating for shouldered eye bolts increases with pull angle.
    a) True  b) False

22) Loads should always be applied to eye bolts in the plane of the eye.
    a) True  b) False
23) Angular lifts with plain eye bolts should never exceed how many degrees
   a) 0°  
   b) 30°  
   c) 45°  
   d) 60°

24) Angular lifts with shouldered eye bolts should never exceed how many degrees
   a) 0°  
   b) 30°  
   c) 45°  
   d) 60°

25) Eye bolts are marked with a Working Load Limit.
   a) True  
   b) False

26) Which shackles are not approved for use at LLE.
   a) Round Pin Shackles  
   b) Screw Pin Shackles  
   c) Bolt-Type Shackles

27) Shackles are marked with a Working Load Limit.
   a) True  
   b) False

28) The load rating for a shackle is not reduced when side loaded.
   a) True  
   b) False

29) Shackle screw pins shall be fully engaged and hand tightened.
   a) True  
   b) False

30) Multiple sling legs should be applied to the pin on a shackle.
   a) True  
   b) False

31) Never have the pin against the live line in a choker.
   a) True  
   b) False

32) For two slings on a shackle, what is the maximum permitted included angle that does not reduce the WLL?
   a) 60°  
   b) 90°  
   c) 120°  
   d) 180°

33) Which statement about load hooks is the most correct?
   a) Always inspect the hook and latch before using  
   b) Insure there is no excessive wear in the saddle of the hook  
   c) Never use a latch that is distorted or bent  
   d) Always make sure spring will force the latch against the tip of the hook  
   e) All of the above

34) Which statement about load hooks is the most correct?
   a) Always make sure hook supports the load  
   b) The latch must never support the load  
   c) Latches are intended to retain loose sling or devices under slack conditions  
   d) Latches are not intended to be an anti-fouling device  
   e) All of the above
35) When placing two sling legs in a hook, make sure the angle between the legs is less than 90° and if the hook or load is tilted, nothing bears against the bottom of this latch.
   a) True  b) False

36) When attaching two legged slings to a load hook that form an angle greater than 90°, what hardware must be used?
   a) a master link  c) a screw pin shackle
   b) a bolt type shackle  d) any of the above

37) When attaching slings with three or more legs, what hardware must be used?
   a) a master link  c) a screw pin shackle
   b) a bolt type shackle  d) any of the above

38) All rigging materials must be secured inside the latch area and that the latch closes.
   a) True  b) False

39) It is acceptable to point load all types of hooks.
   a) True  b) False

40) A sorting hook can be point loaded.
   a) True  b) False

41) Identify the eight hand signals by filling in the boxes with the correct letter. (8pts)
   a) Hoist (raise)  e) Bridge travel
   b) Move slowly  f) Emergency stop
   c) Lower  g) Carrier travel
   d) Multiple trolleys  h) Stop
42) A payload is being lifted with using a vertical hitch with the following components; Plain machinery eye bolt (WLL 5200 lb), synthetic sling (vertical WLL 10000 lb), Hoist (2T). What is the maximum payload?
   a) 4000 lb  
   b) 5200 lb  
   c) 10000 lb  
   d) Not enough information or not safe

43) A payload is being lifted with a sling in basket hitch configuration with the following components; synthetic sling (basket WLL 10000 lb), and Hoist (4T). What is the maximum payload?
   a) 4000 lb  
   b) 8000 lb  
   c) 10000 lb  
   d) Not enough information or not safe

44) A payload is being lifted using a 2 leg bridle hitch assembled with the following individual components; Plain machinery eye bolts (WLL 5200 lb), synthetic slings (vertical WLL 1000 lb), Shackles (WLL 4T), and Hoist (5T). What is the maximum payload?
   a) 1000 lb  
   b) 2600 lb  
   c) 5200 lb  
   d) 8000 lb  
   e) 10000 lb  
   f) Not enough information or not safe

45) A payload is being lifted using a 2 leg bridle hitch assembled with the following individual components; Plain machinery eye bolts (WLL 5200 lb), synthetic slings (vertical WLL 2000 lb), Shackles (WLL 4T), and Hoist (5T). The sling angle is 30°. What is the maximum payload?
   a) 2000 lb  
   b) 2600 lb  
   c) 5200 lb  
   d) 8000 lb  
   e) 10000 lb  
   f) Not enough information or not safe

46) A payload is being lifted using a 2 leg bridle hitch assembled with the following individual components; hoist rings (WLL 6000 lb), synthetic slings (vertical WLL 10000 lb), Shackles (WLL 4T), and Hoist (5T). The sling angle is 30°. What is the maximum payload?
   a) 3000 lb  
   b) 6000 lb  
   c) 7500 lb  
   d) 8000 lb  
   e) 10000 lb  
   f) Not enough information or not safe

47) A payload is being lifted using a 4 leg bridle hitch assembled with the following individual components; hoist rings (WLL 5000 lb), synthetic slings (vertical WLL 10000 lb), Shackles (WLL 4T), and Hoist (5T). The sling angle is 30°. What is the maximum payload?
   a) 3000 lb  
   b) 5000 lb  
   c) 7500 lb  
   d) 8000 lb  
   e) 10000 lb  
   f) Not enough information or not safe

The next five questions use the following hardware:
A 5000lb load is to be rigged using a 2 leg bridle hitch using with a 10 ton overhead crane. The hardware available is (2) 5/8” hoist rings (WLL of 4000 lb), (2) 2” nylon web slings (vertical WLL 6400 lb), (2) 5/8” shackles (WLL 7165 lb), and (1) 3/4 “ shackle (WLL 10,471 lb).
48) Can this load be rigged safely?
   a) Not enough information
   b) No
   c) Yes
   d) Only if you use you use proper hand signals

49) Given the current configuration, you find the angle created with the load using the two straps equals 30° from horizontal. What is the sling tension for each leg? (hint sine 30°=.5)
   a) 10,000
   b) 2,500
   c) 5,000
   d) Not enough information

50) Which set of rigging gear needs to be changed to safely lift the payload and maintain a sling angle of 30°?
   a) Nylon web slings
   b) 3/4 “ shackle
   c) 5/8 “ hoist rings
   d) 5/8” shackles

51) You find that the 3/4“ shackle does not properly fit on the overhead crane hook. What do you do?
   a) use it anyway
   b) give up and go home
   c) hook the straps together
   d) Find another shackle with adequate load rating that will properly fit on the hook

52) The 5/8” hoist ring has an effective thread length of 0.7”. The hoist ring is being attached to an aluminum payload. Is it safe?
   a) Yes
   b) No