Name (print): ______________________________  Date: ___________ Score: _____

Signature: _________________________________

Each question is worth 1 point unless otherwise noted. A passing score is 64 out of a possible 80. 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 training for capacities 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) The type of overhead cranes used at LLE are
   a) Wall crane
   b) Jib crane
   c) Gantry crane
   d) Overhead bridge crane
   e) All of the above

7) The type of Overhead bridge crane used in OMEGA Target Bay is
   a) Overhead Underhung Bridge Crane
   b) Overhead top running Bridge Crane

8) The type of Overhead bridge crane used in OMEGA EP are
   a) Overhead Underhung Bridge Crane
   b) Overhead top running Bridge Crane
9) If two hoists are used simultaneously, the combined rated load of hoists shall not exceed the rated load of the support structure.
   a) True  
   b) False

10) All load blocks must display a load rating.
   a) True  
   b) False

11) One difference between J-bolt rail support and Rail Clips is.
   a) J-Bolts are designed to hold the rail down.
   b) J-Bolts hook around the rail support beam.
   c) J-Bolts are not installed opposing one another.
   d) J-Bolts are flat, while rail clips are round.

12) Fire extinguishers for LLE overhead cranes are located at
   a) the base of ladders accessing the bridge  
   b) on the bridge

13) The primary function of a bumper is to
   a) Prevent the load from swinging
   b) Stop the hoist hook travel.
   c) Protect the crane from damage due to hitting the runway stops.
   d) Protect the End stop.

14) Overhead bridge cranes shall be equipped with sweeps that:
   a) Extend below the top of the rail on all wheels.
   b) Are mounted only on the trolley.
   c) Extend below the top of the rail and project in front of the crane leading wheels.
   d) Extend below the top of the rail and project in front of the crane trailing wheels.

15) A missing guard or panel
   a) Must be replaced prior to operating the crane.
   b) Can be removed during operation.
   c) Is not a safety hazard.
   d) Can remain missing if the crane was manufactured prior to 1982.

16) How many bridge brakes are there on LLE overhead cranes?
   a) 1  
   b) 2  
   c) 3  
   d) 4

17) Brakes for powered cranes are
   a) Applied manually.  
   b) Only engineered to hold 100% of rated load.
   c) Spring set, power released.  
   d) Power set, spring released.

18) How many trolley brakes are there on LLE overhead cranes?
   a) 1  
   b) 2  
   c) 3  
   d) 4
19) The hoist holding brake is
   a) A manually set brake.
   b) A spring set electrically released mechanism.
   c) A load control brake.
   d) An eddy current brake.

20) The power supply to the runway conductors shall be controlled by a switch located on a fixed structure, accessible from the floor, and arranged to be locked in the open/off position.
   a) True
   b) False

21) The electrical disconnects for all LLE bridge cranes are clearly labeled on the cover.
   a) True
   b) False

22) A power supply disconnect used to remove power to an overhead crane runway shall be.
   a) Accessible from the crane cab.
   b) Accessible from the floor.
   c) Accessible from the pendant.
   d) Located on the crane walkway.

23) Crane electrical equipment and controls are located directly on the bridge.
   a) True
   b) False

24) All controller push buttons must.
   a) Have rubber boots to prevent electrical contact.
   b) Return to the off position when released by the operator.
   c) Be specifically marked "North," "East," "South," and "West."
   d) Be kept above head height when not in use to prevent head injuries.

25) A strain relief performs what function.
   a) Holds the festoon in position.
   b) Keeps the bridge conductors in place.
   c) Removes pendant weight from the conductors.
   d) Removes pendant weight from the operator.

26) Electrical shoe type collectors in the power feed system.
   a) Send power to the runway buss.
   b) Collect power from the runway buss.
   c) Collect excess power and dissipate that power through resistors.
   d) Is a better alternative to a festoon system.

27) The primary purpose of a hoist limit switch is to
   a) Prevent overtravel of the powered bridge.
   b) Limit hook travel.
   c) Ensure the holding brakes are functioning.
   d) Replace the geared limit switch.
28) Which statement about load hooks is the most correct?
   a) Always make sure the 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

29) Wire rope defects consist of
   a) Wire breaks
   b) Reduction in diameter from deterioration
   c) External wear
   d) Decreased elasticity
   e) Internal corrosion
   f) External Corrosion
   g) Deformation
   h) All of the above

30) Wire rope defects reduce the load rating of the wire rope.
   a) True
   b) False

31) In an overhead hoist running rope, how many valley breaks are permitted?
   a) 0
   b) 3
   c) 4
   d) 6
   e) 12
   f) No limit

32) At LLE, any rope that does not appear to be in a new condition must be tagged out for inspection by an external Certified Crane Inspector?
   a) True
   b) False

33) At LLE, Frequent Inspection of the cranes occurs
   a) Daily
   b) Weekly
   c) Monthly
   d) Quarterly
   e) Yearly
   f) When the crane breaks down

34) At LLE, Periodic Inspection of the cranes occurs
   a) Daily
   b) Weekly
   c) Monthly
   d) Quarterly
   e) Yearly
   f) When the crane breaks down

35) At LLE, periodic and frequent crane inspections by
   a) Qualified LLE personnel
   b) Operators
   c) Certified Crane Inspectors
   d) Anyone who has time

36) Records for overhead crane inspections are kept and maintained by the O&M group and are available for review by crane operators.
   a) True
   b) False

37) At LLE Operational Tests are performed by
   a) Qualified LLE personnel
   b) Operators
   c) Certified Crane Inspectors
   d) Anyone who has time
38) At LLE maintenance is performed by  
   a) Qualified LLE personnel  
   b) Operators  
   c) Certified Crane vendors  
   d) The Operations and Maintenance group  

39) LLE personnel are qualified and permitted to perform preventive maintenance on overhead cranes.  
   a) True  
   b) False  

40) At the start of each shift, visual crane inspections must be performed by  
   a) Qualified LLE personnel  
   b) Operators  
   c) Certified Crane Inspectors  
   d) Anyone who has time  

41) No overhead crane is entirely safe unless it is  
   a) Used on a regular basis.  
   b) Tested to 150% of rated load.  
   c) Properly maintained.  
   d) Operated by a qualified inspector.  

42) Cranes shall be operated only by the following qualified personnel:  
   a) designated persons  
   b) trainees under the direct supervision of a designated person  
   c) maintenance and test personnel, when it is necessary in the performance of their duties  
   d) inspectors (crane)  
   e) any of the above  

43) Prior to operating an overhead crane or hoist, the operator should  
   a) Make sure people are at least 3-feet from the hoisting action.  
   b) Read the crane operators manual.  
   c) Read the load chart and check all operating radii.  
   d) Test the crane's dynamic braking.  

44) When is the crane operator required to test the crane controls?  
   a) On an hourly basis.  
   b) Weekly.  
   c) Daily.  
   d) At the start of the shift.  

45) Do not  
   a) Perform a daily inspection at the start of a shift. Only at the end of the shift.  
   b) Check to see that the crane has been inspected within the last year.  
   c) Lift two or more separately rigged loads.  
   d) Check load weight against crane capacity, overhead cranes have tremendous strength.  

46) The first test of an upper limit switch should be conducted at  
   a) Fastest hoist speed.  
   b) Slow speed.  
   c) 50% of rated speed.  
   d) 75% of rated speed.
47) Prior to starting a shift the crane operator should
   a) Review previously documented crane issues.
   b) Operate the crane with at least 25% rated load.
   c) Run down the batteries in the remote control.
   d) Test the path of the load.

48) If the pendant station has a stop button you should
   a) Check the stop button during a pre-operational inspection.
   b) Never use the stop button unless there is an emergency.
   c) Press the stop while the hoist is traveling.
   d) Use it after every lift.

49) Before moving any load the weight of the load should be
   a) Checked to ensure the lift is within capacity of the crane.
   b) No greater than 110% of the crane's capacity.
   c) Rigged with a chain sling to avoid slipping.
   d) Checked by lifting it a few inches to see that the crane can handle the weight.

50) An important aspect of maintaining safety of crane and rigging operations is
   a) Keeping all body parts 10-feet from the load.
   b) Knowing the weight of the load.
   c) Never using chain slings.
   d) Never using slings for more than 50% of their rated capacity.

51) "Rated Load" is defined as
   a) The maximum load for which a crane or hoist is designed.
   b) The maximum load which you intend to lift during a shift.
   c) Maximum load capacity plus 25%.
   d) The load weight applied on the hook(s).

52) The hoist or crane user should conduct an inspection
   a) Place a load of at least 50% of the hoist capacity on the hook.
   b) Ensure a load equal to 10% of stated line pull is on the hook.
   c) Ensure the hoist will be capable of running into the switch at 115% of rated speed.
   d) The operator should operate the hoist or crane in each of the crane functions.

53) The proper way to test the hoist brakes is
   a) In the hoisting direction.
   b) In the lowering direction.
   c) Within 35% of the rated load speed.
   d) Within two inches after power is interrupted.

54) When working in tight areas it is a good idea to
   a) Move the load through the area quickly to avoid contact with people or obstructions.
   b) Perform a load test of the crane first.
   c) Make a dry run to determine the safest way to operate under existing conditions.
   d) Refuse to make the lift.
55) Before starting to move a load, an operator should
   a) Anticipate that workers will get out of the way.
   b) Know the intended travel path.
   c) Know where to park the crane.
   d) Turn on the flashing light.

56) When positioning a crane for a true vertical lift
   a) Be ready to move the load quickly when the load swings.
   b) Get the load hook within 12-inches of the load center.
   c) Hoist and travel quickly to catch the drift.
   d) Make sure the hook is above the load's center of gravity.

57) Before starting a lift, hoist lines must be.
   a) Of 6x25 wire rope construction.
   b) Within plus or minus 15-degrees for fleet angle.
   c) Vertical.
   d) Not twisted more than three times around themselves.

58) When moving a load into an area where your visibility is limited you should
   a) Hoist the load over everyone to get out of their way.
   b) Identify a signal person to help spot the load.
   c) Only do so with radio communication.
   d) Tell everyone to watch out.

59) When moving a load you should
   a) Keep the load as high as possible.
   b) Never hoist loads over personnel.
   c) Only stop the load over other workers when necessary.
   d) Travel at full speed.

60) When landing a load, you must be certain
   a) The crane bridge is locked into position.  
   b) The crane can handle the load.  
   c) The floor can support the weight.  
   d) The trolley is not against the end stops.

61) When parking a crane you should
   a) Expect that forklift traffic will see and avoid the crane block.
   b) Leave the crane in the aisle so it is ready for your next lift.
   c) Leave the load block down low so everyone can see it.
   d) Park the crane where it causes the least interference.

62) Unusual noises and/or vibrations should be.
   a) Caused by normal travel of the crane.
   b) Ignored until the end of your shift.
   c) Immediately reported to supervision.
   d) Recorded on the daily inspection log.
63) When are personnel allowed to ride on a below the hook lifting device
   a) Always.
   b) Never.
   c) When instructed to do so by supervision.
   d) When their job requires them to do so.

64) Only approved and rated rigging gear shall be attached to a load hook by a qualified rigger.
   a) True b) False

65) Side pulls are permitted at LLE only when coordinated through ME.
   a) True b) False

66) The operator shall not leave his position at the controls
   a) Until his shift has ended.
   b) While a load is suspended.
   c) Until the brakes have been checked and the load is secure in its elevated position.
   d) Until power has been locked out.

67) A load shall not be lowered below the point where less than ___ wraps of rope remain on each
    anchorage of the hoisting drum. (Fill in the blank)
    a) 0 b) 1 c) 2 d) 3

68) Select the most complete statement below that completes the following statement: "Crane motion
    includes"
    a) Holding the load.
    b) Initiating movement and stopping movement.
    c) Initiating movement and controlling movement
    d) Initiating movement, controlling movement, and stopping movement.

69) If the crane operator has any questions or concerns about operating safety or rigging, he/she should
    a) Check with supervision for a resolution.
    b) Make their best estimate of safety and get the job completed.
    c) Work extra cautiously.
    d) Quit the job and go on to other work.

70) If a crane operator must turn his/her attention away from a lifted load
    a) Stop the machine first.
    b) Get someone else to watch the load.
    c) It is okay so long as there are no obstructions in the way.
    d) The crane speed should be reduced to slow.
71) Identify the eight hand signals by filling in the boxes with the correct letter. (8 pts)
   a) Hoist (raise)          e) Bridge travel
   b) Move slowly           f) Emergency stop
   c) Lower                g) Carrier travel
   d) Multiple trolleys    h) Stop

72) If an overhead crane has a "Do Not Use" tag on the disconnect you should
   a) Consult a co-worker for his or her suggestion.
   b) Not use the crane.
   c) Use the crane for your shift and place the tag back on the crane.
   d) Use the crane sparingly.

73) Any overhead crane found to have a deficiency shall be de-energized and tagged out in accordance
    with LLE lockout/tagout procedures.
   a) True
   b) False