ROBOTICS USER TEST

1 When operating the Robots it is important to remember that
  a. Safety is the responsibility of the user
  b. Motorized robotics are hazardous
  c. Although the equipment is designed to prevent damage to the instrument and user, it is only through constant vigilance and careful practice that safety is maintained
  d. The Robots do not know when a user is in the way.
  e. Safety fail-safe systems can fail
  f. All of the Above.

2 If I cannot use the Robotics time I signed-up for, or if I finish my experiments early I should?
  a. Go home and take a nap
  b. Slip out quietly
  c. Process take some pretty pictures on the Minstrel while it is not in use
  d. Inform the next user, or the Manager, and then clean the user area.
  e. Be thankful that I can do something else
  f. Leave before I'm caught

3 The small well on the Art Robbins Intelliplate 2 well (db code: IN) holds what volume?
  a. 2 μl
  b. 4 μl.
  c. 6 μl
  d. 8 μl
  e. 10 μl.
  f. 12 μl

4 The large well on the Art Robbins Intelliplate 2 well (db code: IM) holds what volume?
  a. 2 μl
  b. 4 μl
  c. 6 μl
  d. 8 μl
  e. 10 μl.
  f. 12 μl

5 The crystal screening supplies kept in the facility are:
  a. Free, so I can use as much as I like
  b. A common shared resource, which I must use wisely and with care
  c. Are only for use with the Center Robotics
  d. Only for Center Approved Projects
  e. Available to anyone
  f. B, C, and D only.
5 Why does every tray need to have a barcode?

☐ a. It looks neat  ☐ b. NIH requirements for data storage
☐ c. The University requires a record of all experiments.  ☐ d. So that it can be imaged.
☐ e. All of b, c and d.  ☐ f. The Manager is overly controlling

6 Why should every tray be imaged by the Minstrel?

☐ a. So that the PI has access to the results of his/her funded research.
☐ b. The University requires a record of all experiments.
☐ c. Easy access to the crystal screening results.
☐ d. Officious Center Managers
☐ e. University regulations.
☐ f. All of the above, except d.

7 When using the Intelliplate 2-well crystallization trays to setup 200nl + 200nl drops which barcode ID should be used?

☐ a. IA  ☐ b. IB
☐ c. IC  ☐ d. IM
☐ e. IN.  ☐ f. It doesn't matter

8 Which of the following are CT codes for 24 well hanging-drop Linbro trays

☐ a. LA/LE for single drops  ☐ b. LB for two drops per well (row-wise)
☐ c. LC for three drops per cover-side  ☐ d. LD/LZ for four drops per well
☐ e. LG for two drops per well (column-wise)  ☐ f. All of the above.

9 When using 24 well crystallization trays I should remember that

☐ a. V0 is the CT code for “Libro”-size ChrysChem trays  ☐ b. V6 is the CT code for SBS-size ChrysChem-M plates
☐ c. To always remove the covers before placing them in the Hotel for imaging  ☐ d. Collect slices of +/- 0.2 mm for a sharp FocusFused “Combined image”
☐ e. Use a +45° polarization filter for finding those small crystals hidden in precipitate  ☐ f. All of the above.
9 I should notify the manager
- a. Whenever the robot malfunctions
- c. By email
- e. When I need help
  - b. When supplies are low or finished
  - d. By writing in the logbook
  - f. All of the above.

1 The Phoenix Cold Block
0
- a. Goes in position #6
- c. Should be stored in the refrigerator at 4°C
- e. Both a & c.
  - b. Goes in position #7
  - d. Should be stored in the freezer at -20°C
  - f. Both b & d

11 What is the purpose of the “Thorough End of Day Wash” protocol
- a. Clean the syringes with a mild detergent
  kaotrophic agent to remove any residual buffer
  - b. To wash the capillary valve mechanism of
    the nano nozzle with 0.1M NaOH – removing
    any protein deposits
  - c. Thoroughly clean the nano nozzle and 96 syringes.
  - d. Prepare the system to be left idle for days or
    weeks.
  - e. All of the above.
  - f. Make my life more difficult

12 Which are the correct procedures to use when working with the Phoenix
- a. Adjust the sample type from “aspirate water” to “aspirate protein” for viscous samples
  - b. Use the preset protocols already available in the “Open Protocol” dialogue
  - c. Manually check the syringe guideplate for smooth motion. The guideplate may be washed with water if it is dirty
  - d. Enter the start and end time, and the #trays= used in the online Calendar and in the Logbook
  - e. I should never wash any metal component with ethanol. Only add a small amount to the (plastic) wash stations to prevent fungal/bacterial growth.
  - f. All of the above.
13 If I am not an authorized user of the SCSB’s X-ray Crystallography Core’s Robotic Crystallization Robots I should.

- a. Work under the direct supervision of an authorized PI
- c. Take this test, pass and become an authorized user
- e. Work with a friend
- b. Receive user training in the correct and safe use of the instrumentation
- d. Do A, B and C, but never E or F.
- f. Sneak in while no-one is looking

1 When I am mounting or dismounting my tray and DWB on the PHOENIX I should

4

- a. Note which position is indicated in phoenix
- c. Never place my fingers in the robot while it is running a protocol, even when it is not moving
- e. Keep my fingers away from moving parts
- b. Wait until the robot has stopped moving
- d. Make sure that any loose clothing, such as ties, necklaces, etc., are kept out of the way
- f. ALL of the above, especially B and C!

15 Most severe injuries occur during non-routine use of instruments such as repair and alignment. If there is a problem with the Robot I should

- a. Stop the robot, and write a note in the LogBook explaining the problem
- c. Turn off the equipment if the problem may present a safety hazard
- e. Do A, B and C.
- b. Inform the Manager immediately so that he can fix the problem
- d. Find the instrument manual and try to fix it myself
- f. Stop my experiment and leave

16 I should not use old crystallization screens in the Phoenix because

- a. There may be empty conditions
- c. The buffer conditions are not known and cannot be reproduced later
- e. I will look like a fool if my PI finds out
- b. They may clog the syringes
- d. I will not be able to optimize any hits found from unknown buffer conditions
- f. All of the above.
1. Great care is needed when using the Phoenix because

☐ a. It could slice off my finger
☐ c. If I break all the syringes it will cost my PI $10,000
☐ e. I will be yelled at if something goes wrong

☐ b. I could waste my entire protein prep
☐ d. The experiment could end up being useless, if the protein or screens are not properly dispensed
☐ f. All of the above.

18. The purpose of the Crystal Tray’s barcode is to

☐ a. Prevent users from entering incorrect barcodes
☐ c. Ensure that the tray information is entered into the CrystalTrack database
☐ e. All of the above.

☐ b. Ensure that the Minstrel knows what plate type it is scanning
☐ d. Make sure that all crystallization trays are properly labeled with a barcode.
☐ f. Finding misplaced trays

19. Access to the computer systems which control the robots is part of the safety protocols limiting unauthorized use. Therefore, I can share my user password

☐ a. Only for very important experiments
☐ c. When I think it is a good idea
☐ e. Only with my assistant

☐ b. When I need to be elsewhere
☐ d. Only with someone I trust
☐ f. As per University regulations- NEVER!

20. Failure to follow the safety rules and regulations can result in

☐ a. DEATH
☐ c. Cancer
☐ e. Revocation of user privileges

☐ b. INJURY
☐ d. Not graduating and/or termination
☐ f. All of the above.

Name:Lab PI:
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