Amgen Labs Refresher Questions

These questions must be satisfactorily completed by every instructor involved in the delivery of Amgen labs within 3 weeks prior to the loan period.

Upon receipt of the kit

1. How should you store the competent bacterial cells?
   A. At room temperature
   B. Immediately put them in the fridge / 4°C
   C. Immediately put them in the freezer / -20°C
   D. Immediately put them in the fridge then transfer to the freezer when you have time

2. Where should you store the LB agar plates?
   A. At room temperature
   B. In the fridge
   C. In the freezer
   D. Either fridge or freezer is ok

3. Where should you store the pARA and pARA-R plasmids?
   A. At room temperature
   B. In the fridge
   C. In the freezer
   D. Either fridge or freezer is ok

4. Where should you store the restriction enzyme mix?
   A. At room temperature
   B. In the fridge
   C. In the freezer
   D. Either fridge or freezer is ok

Before the labs

5. When can you prepare aliquots of restriction enzyme?
   A. Well in advance, with the aliquots refrozen until use
   B. Up to a week before the experiment, with the aliquots refrozen until use
   C. Only on the day of the experiment, with the aliquots refrozen until use
   D. Only on the day of the experiment, with the aliquots kept on ice until use

6. When can you prepare aliquots of competent cells?
   A. Well in advance, with the aliquots refrozen until use
   B. Up to a week before the experiment, with the aliquots refrozen until use
   C. Only on the day of the experiment, with the aliquots refrozen until use
   D. Only on the day of the experiment, with the aliquots kept on ice until use

7. What is the first thing you must do before aliquoting any reagent?
   A. Thaw in the waterbath at 37 deg C
   B. Vortex the tube
   C. Quickly spin down the tube
   D. Invert the tube to mix

8. You need to pour five 0.8% (w/v) agarose gels for a class of 10 students. Each gel needs ~30 mL of 1x sodium borate (SB) buffer. You have been provided with a tube of agarose powder and a bottle of 20x SB buffer. How you will make up the agarose solution for the class?

_____
_____
_____
_____

<u>During the labs</u>

9. You are teaching your students how to pipette. To aspirate 10 uL from a tube, they need to:
   A. Press the pipette to the first stop, lower the tip into the liquid, then release slowly
   B. Lower the tip into the liquid, press the pipette to the first stop, then release slowly
   C. Press the pipette to the 2nd stop, lower the tip into the liquid, then release slowly
   D. Lower the tip into the liquid, press the pipette to the 2nd stop, then release slowly

10. To load dye solution into a well for gel electrophoresis, one needs to:
   A. Place the loaded pipette tip above the buffer line just above the well, then press the pipette to the first stop
   B. Place the loaded pipette tip just inside the well, press the pipette to the first stop, withdraw the tip from the well, then release
   C. Place the loaded pipette tip just inside the well, press the pipette to the first stop, release slowly, then withdraw the tip from the well
   D. Place the loaded pipette tip into the bottom of the well, press the pipette to the second stop, then withdraw the tip from the well

11. Which pipette should be used to dispense 22 uL of liquid into a tube?
   A. P2
   B. P20
   C. P200
   D. P1000

12. Your class is conducting a restriction digest of the recombinant plasmid (lab 2A). Which of the following can affect the outcome of the digest?
   A. Incubating the digest for 30 min instead of 1 hr
   B. Incubating the digest for 4 hrs instead of 1 hr
   C. Incubating the digest at room temperature instead of ~37 deg C
   D. All of the above
   E. None of the above

13. What is the purpose of arabinose in the bacterial agar plates (lab 5A)?
   A. To prevent the growth of non-transformed bacteria
   B. To serve as the main energy source for the bacteria
   C. To induce the expression of red fluorescent protein
   D. To boost the growth of transformed bacteria

14. Your students did not see any bacterial colonies on their LB, LB/amp, or LB/amp/ara plates. Which is the most likely reason for this?
   A. The competent cells have been compromised
   B. The transformation process did not work

C. The ampicillin in the plates must have degraded
D. All of the above

15. There are no visible bands in your students' gels after gel electrophoresis. Give two possible reasons for this:
    A. _____
    B. _____

<u>After the labs</u>

16. What do you do with waste from the pipetting practice labs (lab 1), such as agarose plates and pipette tips?
    A. Flush down the sink
    B. Put in the school's waste bins
    C. Put in your own household bins
    D. Put in biohazard bags and send back to the university for autoclaving and disposal

17. What do you do with waste from the transformation lab (lab 5A), such as agar plates, pipette tips and microfuge tubes?
    A. Flush down the sink
    B. Put in the school's waste bins
    C. Put in your own household bins
    D. Put in biohazard bags and send back to the university for autoclaving and disposal

18. How should you clean the gel electrophoresis tank after running a gel?
    A. Rinse with water and place upside down to air dry
    B. Rinse with water and pat dry with soft tissues
    C. Rinse with soapy water and air dry
    D. Don't rinse, air dry only

19. What should you do with the gel casting trays after running a gel?
    A. Keep them for future use
    B. Dispose of them in the general waste bin as they are single-use only
    C. Dispose of them in the biohazard bags as they are contaminated with DNA
    D. Clean and return them with the kit

20. A student accidentally drops the Prep-One visualiser hood, chipping off a corner. What should you do?
    A. Since it's easily fixable, just glue them back together
    B. Fix if possible, otherwise just return the item with the kit
    C. Notify the ABE team as soon as possible and await their advice
    D. Buy a replacement item and send that back with the kit
    E. All of the above

21. You're packing up the kit for return. Which of the following should you do?
    A. Go through the checklist to ensure no equipment is missing from the kit
    B. Combine all partially used aliquots of reagents and send them back
    C. Remove the handbooks from the kit as they are yours to keep for reference
    D. All of the above