Upper Level Math/Drug Proficiency Fall Review 2 KEY

Calculate the following problems. Unless indicated, all medications involving mL greater than 1 should be rounded to the nearest tenth. Answers in mL that are less than 1 should be rounded to the nearest hundredth. All answers involving tablets should be recorded in terms of # of tabs (or ½ tabs).

1. The order is to restrict IV fluid intake to 1200 mL/24 hour. You are caring for this client on the 11 pm-7 am shift. The intake and output record indicates the client has received 900 mL IV during the last 16 hour. What is the flow rate now? The set calibration is 20 gtts/mL.   __**19**__gtts/min.

    X gtts/min = 20 gtts/mL x 900 mL/16 hr x hr/60 min

2. Your client is to receive Atropine gr 1/100 subq stat. Atropine 0.4 mg per mL is available. Calculate the dosage. __**1.5**__mL.

    X mL = mL/0.4 mg x 60 mg/gr 1 x gr 1/100 /1

3. The pediatric dosage of a medication is 8 mg/kg every 4 hours. Calculate the daily and individual dosages for a child weighing 40 lbs.
    __**145.5**___mg/dose.   __**873**___mg/day.

    X mg/dose = 8 mg/kg x kg/2.2 lbs x 40 lbs/1

    X mg/day = 145.5 mg/dose x 6 doses/day

4. Codeine tablets have a strength of 30 mg. To prepare a gr ¼ dose you would give ___**0.5**____tab.

    X tab = tab/30 mg x 60 mg/gr x gr ¼/1

5. The normal pediatric dosage of a medication is 4 mg/kg every 6 hours. Calculate the daily dosage for a child weighing 40 lb. ___**290.9**___mg/day.

    X mg/day = 4 mg/kg/dose x kg/2.2 lbs x 40 lbs/1 x 4 doses/day

6. Your client needs to receive 45 mL of an IV solution every hour using microdrip tubing. Calculate the flow rate. ___**45**___gtts/min.

   X gtts/min = 60 gtts/mL x 45 mL/hr x hr/60 min

7. The order reads to give 6000 units of heparin. You have a 10 mL multi-dose vial of heparin labeled 10,000 units per 2 mL. How much would you need? ___**1.2**____mL.

   X mL = 2 mL/10,000 units x 6000 units/1

8. You have orders to start a Heparin drip on a patient who weighs 190 lbs. The orders are for a 60 units/kg bolus of heparin and to start a heparin drip at 12 units/kg/hr. The Heparin comes mixed with 25,000 units in 500 mL. The vial for the bolus has 10,000 units in 1 mL. Calculate both the bolus and continuous drip.
   Bolus: ___**5182**___units.   ___**0.52**____mL.
   Continuous infusion: ___**1036**___units/hr.   ___**20.7**___mL/hr.

   X units = 60 units/kg x kg/2.2 lbs x 190 lbs/1

   X mL = 1 mL/10,000 units x 5182 units/1

   X units/hr = 12 units/kg/hr x kg/2.2 lbs x 190 lbs/1

   X mL/hr = 500 mL/25,000 units x 1036 units/hr

9. The orders for a 9 lb infant are to infuse Claforan IVPB 50 mg/kg. Calculate the correct pediatric dosage. ___**204.5**_____mg.

   X mg = 50 mg/kg x kg/2.2 lbs x 9 lbs/1

10. The normal dose of pediatric medication is 15 mg/kg every 4 hours. Calculate the daily & individual doses for a child weighing 34 lbs.
    ___**231.8**____mg/dose.   __**1390.8**____mg/day.

    X mg/dose = 15 mg/kg x kg/2.2 lbs x 34 lbs/1

    X mg/day = 231.8 mg/dose x 6 doses/day

    The medication comes prepared with 50 mg per 1 tsp. How much will you administer for 1 dose? __**4.6**___tsp.

    X tsp = 1 tsp/50 mg x 231.8 mg

11. You have an IV of D5NS infusing at 80 mL/hr and you have tubing with a drip factor of 10 gtts/mL. How many gtts/min will you infuse this at? __13___gtts/min.

X gtts/min = 10 gtts/mL x 80 mL/hr x hr/60 min

12. You have an IVPB of 500 mg in 50 mL to run for 20 min. How many mL/hr will you infuse this at? With a tubing factor of 20 gtts/mL how many gtts/min will you use?
___150____mL/hr.   __50____gtts/min.

X mL/hr = 50 mL/20 min x 60 min/hr

X gtts/min = 20 gtts/mL x 50 mL/20 min

13. During your 8 hour shift you need to infuse 600 mL of D5NS. The set calibration of the tubing is 15 gtts/mL. What is the flow rate?
___75_____mL/hr.   ___19_____gtts/min.

X mL/hr = 600 mL/8 hr

X gtts/min = 15 gtts/mL x 75 mL/hr x hr/60 min

14. The normal pediatric dosage of medication is 60 mg every 4 hours. Calculate the daily dose for a child weighing 48 lbs. If the mediation comes prepared with 125 mg/tsp. How much will you administer in 1 dose?
___360_____mg/day.   __0.5_____tsp/dose.

X mg/day = 60 mg/dose x 6 doses/day

X tsp/dose = tsp/125 mg x 60 mg/dose

15. Morphine 10 mg has been ordered. You have Morphine gr ¼ /mL available. You will give __0.67_____mL.

X mL = mL/gr ¼ x gr/60 mg x 10 mg/1

16. Vancomycin 100 mg is contained in 250 mL of NS and is to infuse over 2 hours. The set calibration of the tubing is 20 gtts/min. What is the flow rate?

____**125**_____mL/hr.   ___**42**_____gtts/min.

X mL/hr = 250 mL/2 hr

X gtts/min = 20 gtts/mL x 125 mL/hr x hr/60 min

17. You have orders to give Tylenol grains 10. The tablets come prepared with 325 mg per tab. How many will you administer? ___**2**____tab.

X tab = tab/325 mg x 60 mg/gr x gr 10/1

18. You have orders to infuse Rocephin 1 gram IVPB every 24 hours. The medication comes mixed in 50 mL. The drug book states to give it over 30 min. How fast will you administer the medication? __**100**_____mL/hr.

X mL/hr = 50 mL/30 min x 60 min/hr

19. You have an IVPB with 60 mg in 100 mL. You are to administer this medication over 1 hour. How fast will you administer this medication? ___**100**_____mL/hr.

X mL/hr = 100 mL/hr

20. You have orders to give KCL 40 meq IV over 4 hours. The medication comes from pharmacy in 250 mL NS and 20 mL of KCL. How fast will you administer this medication? ____**67.5**_____mL/hr.

X mL/hr = 270 mL/4 hr