

Name: _____

Score: _____ /100

SLCC Math 1020 Mathematics for the Health Disciplines Final Exam

Part II: Calculator Okay. No books. No notes.

31. The doctor orders 75 mg of a drug p.o. t.i.d.
On hand you have a suspension of 180 mg/ 5 mL.
How many mL should be given? Round to the nearest mL. _____

32. The order is for 4.5 milligrams per kilogram of a drug
for a patient weighing 55 kg.
Each tablet contains 50 milligrams.
How many tablets would you administer to this patient? _____

33. How many 0.9 g sodium chloride tablets will you dissolve
to make 600 mL of 0.9% sodium chloride solution? _____

34. Order: delavirdine 700 mg/m²
On hand: scored tablets labeled 225 mg (Assume each tablet can be cut into two halves.)
How many tablets of this antiviral drug would you administer
to a patient who is 4 feet 11 inches tall weighing 120 pounds?

Use $BSA = \sqrt{\frac{(Weight\ in\ pounds)(Height\ in\ inches)}{3131}}$ _____

Intravenous Infusion Rates and General Health Care

35. The physician orders 2 liters of lactated ringers over 12 hours.
The drip factor of the tubing is 20 gtt/mL.
What is the flow rate in drops per minute?
Round to the nearest drop. _____

36. The doctor prescribes 10,000 Units of heparin added to 500 ml of D5%W at 1,200 Units/hour.

How many drops per minute should you administer if the I.V. tubing delivers 15 gtt/ml?

37. A patient is receiving an infusion of 600 mL NS at 35 gtt/min. If the drop factor is 20 gtt/mL, how long will this last?

Write your answer in hours and minutes format.

Round to the nearest minute. For example, 13 hours 23 minutes.

38. The recommended dose of Demerol for an IM pre-op is 0.8 mg/kg to 1.5 mg/kg.

The doctor ordered 28 mg to a child weighing 60 lbs.

a. How many kilogram does the child weigh?

Give your answer correct to 2 decimal places.

b. What is the range of doses that is safe for this child?

c. Is the dose safe?

39. At 6:00 AM, a patient has an infusion of 1250 mL D5W.

If the flow rate is 30 gtt/min and the drop factor is 20 gtt/mL, at what time will the IV finish?

(Give your answer correct to the nearest minute; for example, 8:01a.m.)

40. The prescriber ordered: Amikacin 100 mg/m² for 2 hours IVPB

The directions state: Add 250 mg to 250 mL 5% D/W.

Calculate the flow rate in milliliters per hour if the patient's BSA is 1.5 m².

(Round to the nearest integer.)

41. How would you prepare 4 L of a 1 : 45 solution from a 1 : 25 stock solution?
(Give your answer correct to the nearest milliliter.)

42. The physician orders 0.045 g of Restoril for a patient.
The label for the drug indicates 15 mg/tab.
How many tablets would you administer?

43. The order for Vancomycin is 500 mg in 250 mL
0.9% NS q6h IVPB. Infuse in 60 minutes.
Calculate the flow rate in milliliters per minutes.
(Give your answer correct to one decimal place.)

44. Calculate.

$$\frac{2.4 \times 10^7}{1.5 \times 10^3}$$

45. Order: Versed (Midazolam hydrochloride) 4.5 mg IM on call.
Child's weight: 20 kg.
The manufacturer recommends 0.08-0.2 mg/kg dose q8h

a. What is the range of doses that is safe for this child?
(Give your answer correct to two decimal places.)

b. Is the dose prescribed within the safe dose range?

46. How many significant digits are in the number 73.01? _____

47. Perform the indicated operation to the correct number of significant digits. $2.17 + 3.512$ _____

48. Given 1 calories is approximately 4.184 joules.
Convert 8.5 calories into joules.
Give your answer correct to 3 decimal places. _____

49. If $[H^+] = 0.0000023$ mole/L,
Given $pH = -\log[H^+]$, where $[H^+]$ is the hydrogen ion concentration.

a. What is the pH ?
(Give your answer correct to one decimal place.) _____

b. What type of condition is present? _____

50. How many seconds are there in 1 hour 2 minutes 9 seconds? _____

Answers:

31. 2mL
32. 5 tablets
33. 6 tabs diluted with water to 600 mL
34. 4.5 tablets
35. 56 gtt/min
36. 15 gtt/min
37. 5 hours 43 minutes
38. 27.27 kg. Between 21.82 mg and 40.91 mg. Yes
39. 7:53 p.m.
40. 75 mL/hr
41. 2222 mL of 1 : 25 stock must be diluted with enough solvent to make 4 L of 1:45 solution.
42. 3
43. 4.2 mL/min
44. 1.6×10^4
45. a. From 1.6 to 4 mg; b. No
46. 4
47. 5.68
48. 35.564 joules
49. a. 5.6; b. Acidic
50. 3729 seconds