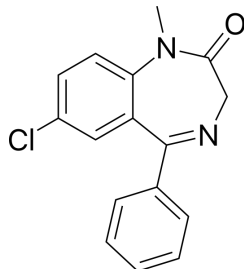


Quiz 3

HCHE111, ELEMENTARY INORGANIC CHEMISTRY I, FALL 2017

NAME:

Problem 1.(10 points.) Diazepam (molecular structure pictured below), originally marketed as Valium[®] is a medication that produces a calming effect, and is used to treat patients with anxiety, drug/alcohol addiction, and or seizures. What is the molecular mass of diazepam if 0.05570 mol weighs 15.86 g?



Problem 2.(10 points.) Xylose aka “Wood Sugar” is a sugar that was first isolated from wood and thus named for it. It can be metabolized by humans, however its most popular use is in the clinical testing of malabsorption in animals. The **empirical formula** for xylose is CH_2O , with a molar mass of 150.13 g/mol.

- Calculate the **formula mass** for xylose given the empirical formula above.
- What is the molecular formula for xylose?

PERIODIC TABLE OF THE ELEMENTS

PERIOD

1

2

3

4

5

6

7

GROUP

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

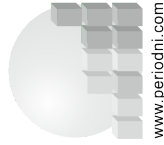
Copyright © 2017 Eni Generali

LANTHANIDE

57 138.91 La LANTHANUM	58 140.12 Ce CERIUM	59 140.91 Pr PRASEODYMIUM	60 144.24 Nd NEODYMIUM	61 (145) Pm PROMETHIUM	62 150.36 Sm SAMARIUM	63 151.96 Eu EUROPIUM	64 157.25 Gd GADOLINIUM	65 158.93 Tb TERBIUM	66 162.50 Dy DYSPROSIUM	67 164.93 Ho HOLMIUM	68 167.26 Er ERBIUM	69 168.93 Tm THULIUM	70 173.05 Yb YTTERIUM	71 174.97 Lu LUTETIUM
-------------------------------------	----------------------------------	--	-------------------------------------	-------------------------------------	------------------------------------	------------------------------------	--------------------------------------	-----------------------------------	--------------------------------------	-----------------------------------	----------------------------------	-----------------------------------	------------------------------------	------------------------------------

ACTINIDE

89 (227) Ac ACTINIUM	90 232.04 Th THORIUM	91 231.04 Pa PROTACTINIUM	92 238.03 U URANIUM	93 (237) Np NEPTUNIUM	94 (244) Pu PLUTONIUM	95 (243) Am AMERICIUM	96 (247) Cm CURIUM	97 (247) Bk BERKELIUM	98 (251) Cf CALIFORNIUM	99 (252) Es EINSTEINIUM	100 (257) Fm FERMIUM	101 (258) Md MENDELEVIUM	102 (259) No NOBELIUM	103 (262) Lr LAWRENCIUM
-----------------------------------	-----------------------------------	--	----------------------------------	------------------------------------	------------------------------------	------------------------------------	---------------------------------	------------------------------------	--------------------------------------	--------------------------------------	-----------------------------------	---------------------------------------	------------------------------------	--------------------------------------



www.periodni.com

(1) Atomic weights of the elements 2013, Pure Appl. Chem., 85, 265-291 (2016)