Directions:

a. DO NOT OPEN YOUR EXAM BOOKLET UNTIL YOU HAVE BEEN TOLD TO BEGIN.

b. This exam booklet contains 30 questions, each of which will be weighted equally. The exam is worth 150 points (15% of your course grade).

c. You may use one 8.5" x 11" note sheet and a paper dictionary during the examination. No calculating devices or other reference materials may be used during the examination.

d. You may not ask questions once the examination has begun.

If there is a structural problem with your exam booklet, such as a missing page or poorly printed page, please bring your exam booklet to the proctor.

If you believe that a question is ambiguous or contains a typographic error, write your interpretation of the question on the same page as the question, then put a note on the cover sheet of your exam booklet.

e. You should choose the single best alternative for each question, even if you believe that a question is ambiguous or contains a typographic error. If a question has more than one correct answer, full credit will be awarded for any correct answer.

f. Please fill in the requested information at the top of this exam booklet.

g. Use a #2 pencil to encode any information on your OMR form (bubble sheet).

h. Please encode the following on the OMR form:
   -- Last name and first initial
   -- MSU PID
   -- Exam form (1 X)

i. Only answers recorded on your OMR form will be counted for credit. Completely erase any responses on the OMR form that you wish to delete.

j. You must turn in this exam booklet and the OMR form when you have completed the exam. When leaving, please be courteous to those still taking the exam.

*****************************************************************************
*  Exam Key                                                                 *
*                                                                           *
*  01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 *  *
*  C  D  A  C  E  D  E  D  E  C  B  E  C  B  C  B  C  A  A  E  B  D  B  A  *    *
*                                                                           *
*  25 26 27 28 29 30                                                      *  *
*  D  A  C  B  E  E                                                      *
*****************************************************************************
A = 8
B = 5

print( A - B / 2 )    # Line 1
print( B % 3 * A )    # Line 2

C = 2
C = A + - B ** C - 1
print( C )            # Line 3

D = 5
D *= A + B * 2
print( D )            # Line 4

01. Which of the following statements about the Python code labeled "Line 1" in Figure 1 is correct?

A)  It will display 1 when the program is executed.
B)  It will display 1.5 when the program is executed.
C)  It will display 5.5 when the program is executed.
D)  It will display 6 when the program is executed.
E)  None of the above.

02. Which of the following statements about the Python code labeled "Line 2" in Figure 1 is correct?

A)  It will display 5 when the program is executed.
B)  It will display 8 when the program is executed.
C)  It will display 13 when the program is executed.
D)  It will display 16 when the program is executed.
E)  None of the above.

03. Which of the following statements about the Python code labeled "Line 3" in Figure 1 is correct?

A)  It will display -18 when the program is executed.
B)  It will display 3 when the program is executed.
C)  It will display 8 when the program is executed.
D)  It will display 32 when the program is executed.
E)  None of the above.

04. Which of the following statements about the Python code labeled "Line 4" in Figure 1 is correct?

A)  It will display 18 when the program is executed.
B)  It will display 50 when the program is executed.
C)  It will display 90 when the program is executed.
D)  It will display 130 when the program is executed.
E)  None of the above.

05. Which of the following statements is not valid Python?

A)  print( float("17") )
B)  print( str(+45) )
C)  print( int("-36") )
D)  print( str(1.25e+4) )
E)  All of the statements are valid Python.
A = 11.7
B = 9.2
C = 4
D = 9

E = A < B or B >= 7.5
F = D > 2*C and C < D//2

print( E, F )     # Line 1

G = 2*C < int(A) < D+3
H = 3*(D-9) and A-B

print( G, H )     # Line 2

06. Which of the following statements about the Python code labeled "Line 1" in Figure 2 is correct?

A) It will display False False when the program is executed.
B) It will display False True when the program is executed.
C) It will display True True when the program is executed.
D) It will display True False when the program is executed.
E) None of the above.

07. Which of the following statements about the Python code labeled "Line 2" in Figure 2 is correct?

A) It will display False False when the program is executed.
B) It will display False True when the program is executed.
C) It will display True True when the program is executed.
D) It will display True False when the program is executed.
E) None of the above.

08. What will be displayed when the following Python code is executed?

A = 9
B = 5
if A % 3 != 1:
    A +=3
    if (A // 2 == 4) or (A % 2 == 0):
        A += 1
        B = A + 10 * 3 // 5
    B += 2
else:
    A -= 2
    B *= A

print( A, B )

A) 2 10
B) 7 40
C) 12 7
D) 13 21
E) None of the above.
A, B, C = 0, 0, 0

D = 14

while D > 1:
    A += 1
    if D%2 == 0:
        B += 1
    else:
        C += 1
    D -= 3

print( A )    # Line 1
print( B )    # Line 2
print( C )    # Line 3
print( D )    # Line 4

09. Which of the following statements about the Python code labeled "Line 1" in Figure 3 is correct?

A) It will display 1 when the program is executed.
B) It will display 2 when the program is executed.
C) It will display 3 when the program is executed.
D) It will display 4 when the program is executed.
E) None of the above.

10. Which of the following statements about the Python code labeled "Line 2" in Figure 3 is correct?

A) It will display 1 when the program is executed.
B) It will display 2 when the program is executed.
C) It will display 3 when the program is executed.
D) It will display 4 when the program is executed.
E) None of the above.

11. Which of the following statements about the Python code labeled "Line 3" in Figure 3 is correct?

A) It will display 1 when the program is executed.
B) It will display 2 when the program is executed.
C) It will display 3 when the program is executed.
D) It will display 4 when the program is executed.
E) None of the above.

12. Which of the following statements about the Python code labeled "Line 4" in Figure 3 is correct?

A) It will display 1 when the program is executed.
B) It will display 2 when the program is executed.
C) It will display 3 when the program is executed.
D) It will display 4 when the program is executed.
E) None of the above.
B, C, D = 0, 0, 0

for A in range( 2, 9 ):
    if A%3 == 0:
        B += 1
    elif A%2 == 0:
        C += 1
    else:
        D += 1

print( A )    # Line 1
print( B )    # Line 2
print( C )    # Line 3
print( D )    # Line 4

13. Which of the following statements about the Python code labeled "Line 1" in Figure 4 is correct?
   A) It will display 0 when the program is executed.
   B) It will display 7 when the program is executed.
   C) It will display 8 when the program is executed.
   D) It will display 9 when the program is executed.
   E) None of the above.

14. Which of the following statements about the Python code labeled "Line 2" in Figure 4 is correct?
   A) It will display 1 when the program is executed.
   B) It will display 2 when the program is executed.
   C) It will display 3 when the program is executed.
   D) It will display 4 when the program is executed.
   E) None of the above.

15. Which of the following statements about the Python code labeled "Line 3" in Figure 4 is correct?
   A) It will display 1 when the program is executed.
   B) It will display 2 when the program is executed.
   C) It will display 3 when the program is executed.
   D) It will display 4 when the program is executed.
   E) None of the above.

16. Which of the following statements about the Python code labeled "Line 4" in Figure 4 is correct?
   A) It will display 1 when the program is executed.
   B) It will display 2 when the program is executed.
   C) It will display 3 when the program is executed.
   D) It will display 4 when the program is executed.
   E) None of the above.
# Figure 5#

A, B, C = 0, 0, 0

for D in range( 2, 11, 2 ):
    A += 1
    if D//3*3 == D:
        break
    if D//4*4 == D:
        continue
    B += 1
else:
    C = D

print( A )    # Line 1
print( B )    # Line 2
print( C )    # Line 3

17. Which of the following statements about the Python code labeled "Line 1" in Figure 5 is correct?

A) It will display 1 when the program is executed.
B) It will display 2 when the program is executed.
C) It will display 3 when the program is executed.
D) It will display 4 when the program is executed.
E) None of the above.

18. Which of the following statements about the Python code labeled "Line 2" in Figure 5 is correct?

A) It will display 1 when the program is executed.
B) It will display 2 when the program is executed.
C) It will display 3 when the program is executed.
D) It will display 4 when the program is executed.
E) None of the above.

19. Which of the following statements about the Python code labeled "Line 3" in Figure 5 is correct?

A) It will display 0 when the program is executed.
B) It will display 10 when the program is executed.
C) It will display 11 when the program is executed.
D) It will display 12 when the program is executed.
E) None of the above.

20. What will be displayed when the following Python statements are executed?

A = "rhinoceros"
print( A.replace( "aeiou", "X" ) )

A) False
B) True
C) rhXnoceros
D) rhXnXcXrXs
E) None of the above.
A = "Ants"  
B = "Anteater"  
C = "leopard"

print( A<B, B<C )       # Line 1
print( C[3], C[-2] )    # Line 2
print( C[:3] )          # Line 3
print( C[4:] )          # Line 4
print( C[:-5] )         # Line 5

21. Which of the following statements about the Python code labeled "Line 1" in Figure 6 is correct?
   A) It will display False False when the program is executed.
   B) It will display False True when the program is executed.
   C) It will display True False when the program is executed.
   D) It will display True True when the program is executed.
   E) None of the above.

22. Which of the following statements about the Python code labeled "Line 2" in Figure 6 is correct?
   A) It will display o a when the program is executed.
   B) It will display p a when the program is executed.
   C) It will display o r when the program is executed.
   D) It will display p r when the program is executed.
   E) None of the above.

23. Which of the following statements about the Python code labeled "Line 3" in Figure 6 is correct?
   A) It will display leop when the program is executed.
   B) It will display leo when the program is executed.
   C) It will display pard when the program is executed.
   D) It will display ard when the program is executed.
   E) None of the above.

24. Which of the following statements about the Python code labeled "Line 4" in Figure 6 is correct?
   A) It will display ard when the program is executed.
   B) It will display pard when the program is executed.
   C) It will display leop when the program is executed.
   D) It will display leopa when the program is executed.
   E) None of the above.

25. Which of the following statements about the Python code labeled "Line 5" in Figure 6 is correct?
   A) It will display eopard when the program is executed.
   B) It will display opard when the program is executed.
   C) It will display leo when the program is executed.
   D) It will display le when the program is executed.
   E) None of the above.
num = int( input( "Number:" ) )      # Line 1

if num != 0 and 20/num > 6:          # Line 2
    print( "Number OK", end=" " )
print( "Done" )

26. Consider the Python code in Figure 7. What will be displayed when the program is executed and the user pushes the 0 key, followed by the Enter key?

A) Done
B) Number OK Done
C) An error message about the statement labeled "Line 1".
D) An error message about the statement labeled "Line 2".
E) None of the above.

27. Consider the Python code in Figure 7. What will be displayed when the program is executed and the user pushes the A key, followed by the Enter key?

A) Done
B) Number OK Done
C) An error message about the statement labeled "Line 1".
D) An error message about the statement labeled "Line 2".
E) None of the above.

28. Consider the Python code in Figure 7. What will be displayed when the program is executed and the user pushes the 2 key, followed by the Enter key?

A) Done
B) Number OK Done
C) An error message about the statement labeled "Line 1".
D) An error message about the statement labeled "Line 2".
E) None of the above.

29. What will be displayed when the following Python code is executed?

for n in range(5):
    print( n, sep=":", end="." )

A) 0:1:2:3:4:
B) 0:1:2:3:4.
C) 0:1:2:3:4:5:
D) 0:1:2:3:4:5.
E) None of the above.

30. Consider the Python code shown below. Under what circumstances will the Python interpreter issue an error message?

input_file = open( "infile.txt", "r" )
output_file = open( "outfile.txt", "w" )

A) When the file "infile.txt" exists, but is not empty.
B) When the file "outfile.txt" does not exist.
C) When the file "outfile.txt" exists, but is not empty.
D) All of the above.
E) None of the above.