Student name:_____

TRUE/FALSE - Write 'T' if the statement is true and 'F' if the statement is false.

1) Simple RT involves one signal and more than one possible response.

- ◎ true
- ◎ false

2) Reaction time and movement time measure the same aspect of performance.

- ◎ true
- ◎ false

3) A motor task involves having a person watch a screen that flashes multi-colored lights. The person is instructed to press a button as quickly as possible when the color blue flashes on the screen. This task is examining the individual's discrimination RT.

- ◎ true
- ◎ false

4) Constant error (CE) refers to a person's performance bias during a series of trials.

- ◎ true
- ◎ false

5) Radial error (RE) would be the appropriate general accuracy measure to assess the accuracy of a golf putt.

- ◎ true
- ◎ false

6) Root-mean-square error (RMS) is typically used to measure accuracy in discrete skills.

- ◎ true
- ◎ false

7) Kinematics studies how force influences motion.

◎ true
◎ false

8) When a performance score is recorded as m/sec $^{-1}$, the performance measure is velocity.

◎ true
◎ false

9) During REM sleep you would expect a person's EEG to show alpha waves.

◎ true
◎ false

10) TMS involves directing a short burst of magnetic waves at a specific area of the brain cortex in order to temporarily activate that area.

◎ true
◎ false

11) If you move your two arms forward and backward several times at the same time, the phase relationship between them is 0 degrees.

◎ true
◎ false

12) The two legs are 180 degrees out of phase during running.

◎ true
◎ false

MULTIPLE CHOICE - Choose the one alternative that best completes the statement or answers the question.

13) Which of the following would be considered a performance outcome measure?

A) The distance a ball was kicked
B) The angle of the knee at ball impact
C) The electrical activity in the quadriceps muscles during the kick
D) The electrical activity in the brain during the kick

14) Which of the following would be considered a performance production measure?

A) The height of a jump
B) The time to complete a jump
C) The number of successful jumps to reach a target
D) The joint torque at the knee just prior to take off during a jump

15) Which two events mark the beginning and the end of the interval known as reaction time?

A) Warning signal and stimulus signal
B) Stimulus signal and initiation of the response
C) Stimulus signal and the completion of the response
D) Warning signal and the initiation of the response

16) When RT is fractionated, the interval that represents the time it takes to receive and transmit information from the environment is referred to as the:

A) Premotor time
B) Motor time
C) Discrimination time
D) Response time

17) An individual must respond to only one of several signals presented in this type of reaction time.

A) Simple RT
B) Choice RT
C) Discrimination RT
D) Serial RT

18) A physical therapist is helping a stroke patient relearn how to hold a fork. The patient drops the fork five out of the ten trials. The patient is having a _____.

A) Bias problem
B) Constant error
C) Consistency problem
D) Temporal accuracy problem

19) This error measure evaluates performance consistency during a series of trials.

A) AE
B) CE
C) VE
D) E

20) This error measure evaluates overall accuracy during a series of trials.

A) AE
B) CE
C) VE
D) RE

21) To determine muscle activation patterns, this measurement method could be used.

A) EMG
B) EEG
C) Kinetics
D) Kinematics

22) The change in spatial position of a limb is called:

A) Displacement.
B) Velocity.
C) Acceleration.
D) Linear motion.

23) Displacement, velocity, and acceleration are _____ measures of motion.

A) Kinetic
B) Kinematic
C) Force
D) Angular motion

24) What do angle-angle diagrams examine?

A) How fast a person moves between two points
B) The relationship between two joints during movement
C) Changes in acceleration
D) Movement kinetics

25) The term kinetics refers to motion caused by _____.

A) Velocity
B) Angular acceleration
C) Force
D) Movement

26) The measure of muscle activity that detects the lateral displacement of a muscle's belly following maximal percutaneous neuromuscular stimulation is referred to as:

A) Electromyography (EMG)
B) Whole muscle mechanomyography (wMMG)
C) Electroencephalography (EEG)
D) Near infrared spectroscopy (NIRS)

27) Near infrared spectroscopy (NIRS) can be used to measure activity in the:

A) Brain
B) Muscles
C) Brain and muscles
D) None of the above

28) EEG recordings will show _____ waves when the cerebral cortex is active.

A) Alpha
B) Beta
C) Theta
D) Delta

29) This brain activity measurement technique realigns hydrogen atoms in the body and may provide clear 2D and 3D images of the brain.

A) EEG
B) PET
C) EMG
D) fMRI

30) What brain recording technique allows researchers to elicit a motor evoked potential (MEP)?

A) EEG
B) fMRI
C) PET
D) TMS

FILL IN THE BLANK. Write the word or phrase that best completes each statement or answers the question.

31) The interval of time between the initiation and completion of a movement is called _____.

32) A person had the following error scores for a series of 5 trials: +5, -3, +8, +18, -6. The average AE score is _____.

33) Variable error is an indicator of a person's performance _____ when performing a skill that requires hitting a target.

34) The kinematic measure of motor performance that describes the speeding up and slowing down of a movement is called _____.

35) The method of recording electrical activity in the muscles during movement is called _____.

36) If you want to describe the movement of an object in a straight line, the type of motion you would describe is referred to as _____.

37) Force can be calculated from the kinematics of a movement if you know the mass of the moving object and the _____ of the movement.

38) The rotary force of body segments around their joints axes is known as joint _____.

39) The brain activity measurement technique that shows blood flow in the brain is known as _____.

40) The calculation of _____ provides an objective measure of the coordination between two limbs or limb segments by comparing the specific location of each limb or limb segment in one cycle of a cyclic movement.

Answer Key

Test name: Magill 2

1) FALSE
2) FALSE
3) TRUE
4) TRUE
5) TRUE
6) FALSE
7) FALSE
8) TRUE
9) FALSE
10) FALSE
11) TRUE
12) TRUE
13) A
14) D
15) B
16) A
17) C
18) C
19) C
20) A
21) A
22) A
23) B
24) B
25) C
26) B

27) C
28) B
29) D
30) D
31) Movement time
32) 8
33) [consistency, Also acceptable, variability]
34) acceleration
35) [EMG, or electromyography]
36) linear
37) acceleration
38) torque
39) [PET, or Positron Emission Topography]
40) [relative phase, or continuous relative phase]