Student's Name:.....	End of Semester		Time :1h30
	English Exam 4th Year		January 2022
Section:..... Group:			

Before you start, note that this exam is comprised only of two sections; please report all your answers in the tables that appear at the end of each:

I. Read the text then guess the missing words (see the choices in the table) to fill in the gaps.

PROPERTIES AND USES OF METAL

Very rarely do Steelworkers work with (0) _____ in their pure state. We primarily work with (1)_____ and have to understand their features. The (2)_____ of elements and alloys are explained in terms of physical, chemical, electrical, and mechanical properties. (3) _____properties relate to colour, density, weight, and heat conductivity. (4)_____ properties involve the behaviour of the metal when placed in contact with the atmosphere, salt water, or other substances. (5) _____properties encompass the electrical conductivity, resistance, and magnetic qualities of the metal. The (6) _____properties relate to load-carrying ability, wear resistance, hardness, and elasticity. When selecting stock for a job, your main concern is the mechanical properties of the metal. The various properties of (7) _____and alloys were determined in the laboratories of manufacturers and by various societies interested in (8) _____development. Charts presenting the properties of a particular metal or alloy are available in many commercially published reference books. The charts provide information on the (9)_____, tensile strength, electrical conductivity, (10) _____properties, and other properties of a particular metal or alloy. Simple tests can be conducted to determine some of the properties of a metal; however, we normally use a metal test only as an aid for identifying apiece of stock. Some of these methods of testing are discussed later in this chapter. Properties like strength, hardness, toughness, elasticity, plasticity, brittleness, and ductility and malleability are all mechanical properties used as (11) _____of how metals behave under a load. These properties are described in terms of the types of force or stress that the metal must withstand and how these are (12)_____.Common types of (13)_____ are compression, tension, shear, torsion, impact, or a combination of these stresses, such as fatigue. Compression stresses develop within a material when forces compress or crush the material. A column that supports an overhead beam is in compression, and the internal stresses that develop within the column are (14)_____. Tension (or tensile) stresses develop when a material is subject to a (15) _____ load; for example, when using a wire rope to lift a load or when using it as a guy to anchor an antenna. "Tensile strength" is defined as resistance to (16) _____stress or pull and can be measured in pounds per square inch of cross section. (17) _____stresses occur within a material when external forces are applied along parallel lines in opposite directions. Shearing forces can separate material by sliding part of it in one direction and the rest in the opposite direction. Some materials are equally strong in compression, (18)_____, and shear. However, if the same force is applied in a steady motion (not bent back and forth), the rod cannot be broken. The tendency of a material to fail after repeated (19) _____at the same point is known as (20) _____.

NB: Only Answers Reported in the Appropriate Tables will be Considered

Name:…… Group: ……

N°					Answers
0	a. Elements	b. components	c. problems	d. variables	A
1	a. Iron	b. silver	c. copper	d. alloys	
2	a. characteristics	b. components	c. number	d. danger	
3	a. Electrical	b. physiological	C . physical	d. biological	
4	a. Non organic	b. . chemical	c. Electrical	d. physical	
5	a. Electrical	b. biological	c. physical	d. Electronic	
6	a. physical	b. electrical	c. mechanical	d. Anthological	
7	a. textile	b. Fabric	c. material	d. metals	
8	a. material	b. metallurgical	c. matter	d. substance	
9	a. melting point	b. turning point	c. checking point	d. boiling point	
10	a. magnificent	b. majestic	c. magic	d.magnetic	
11	a. measures	b. tool box	c. measurements	d. hammer	
12	a. calculated	b. resisted	c. numbered	d. quantified	
13	a. stress	b. pressured	c. resistance	d. existence	
14	a. comprehension	b. combustion	c. consumption	d. compression	
15	a. heavy	b. dragging	c. pulling	d. thrust	
16	a. short term	b. longitudinal	c. temporary	d. momentous	
17	a. shearing	b. caring	c. sharing	d. pulling	
18	a. timber	b. time	c. tenderness	d. tension	
19	a. beaming	b. bending	c. bounding	d. binding	
20	a. foundling	b. fountain	c. fatigue	d. factory	

II. Manufacturing Techniques, Tests & Experiments, and Energies. Answer in the table below

1. _____ is the removal of surface layers with multiple cutting wheel passes
a. Shearing
b. Milling
c. Grinding
d. Casting

2. A cutting operation that uses oxy fuel is called:
a. Abrasive waterjet cutting
b. Flame cutting
c. Heat cutting
d. Melting

3. What do we call the width of the saw cut?
a. Turf
b. Wide cut
c. Kerf
d. Punch

4. _____is a tool that has a hard and rough surface and used for cutting or grinding?
a. Guillotine
b. Abrasive wheel
c. Chainsaw
d. Rectifier

5. What is the disadvantage of adhesive joints?
a. Work loose overtime
b. Generate flawed welds
c. Are weakened by paint
d. Difficult subsequent removal

6. Rolling roads are used in wind tunnel tests to _
a. Simulate the speed of a vehicle in a tunnel
b. Simulate the spinning wheels turbulence
c. Simulate the speed of the wind in a tunnel
d. Simulate the spinning wheels friction

7. Something made up of different parts or materials
a. Composite
b. Compromise
c. Composure
d. Consistence

8. What does stainless steel contain in addition to iron?
a. Carbon, chromium, and nickel
b. Chromium and nickel
c. Carbon and chromium
d. Carbon and nickel

16. Flame-cutting is an ideal technique for cutting:
a. Pottery
b. Glass
c. Metals
d. Ceramics

17. Drilling with a bit is especially good for cutting:
a. Blind holes
b. Through holes
c. Black holes
d. Dark holes

18. _____is a mechanical joining technique.
a. Gluing
b. Bonding
c. Welding
d. Screwing

19. What is the disadvantage of bolts?
a. Work loose overtime
b. Permanent
c. Are weakened by heat
d. Are weakened by water

20. What does acid test mean?
a. Testing with acid
b. Testing with chemicals
c. Testing in real conditions
d. Testing in a wind tunnel

21. Which statement is correct about the in-use phase?
a. Aluminum lasts longer than steel.
b. It takes less energy to produce steel.
c. It takes more energy to produce aluminum.
d. Steel takes less energy to weld.

22. Which statement is in the post-use phase?
a. Steel cans are cheaply produced.
b. Iron is easy to weld.
c. It is possible to recover devices made from aluminum
d. It takes a lot of energy to produce aluminum

23. Conductivity is defined as the ability to carry
a) Voltage
b) Resistance
c) Current
d) All of the mentioned

24. Galvanized steel means:
a. Coated with zinc
b. Coated with paint
c. Coated with carbon
d. Coated with rust

9. What is the chemical process by which the extraction of aluminum is done?

a. Electrocution
b. Electrification
c. Electrolysis
d. Electrolyte

10. How do you call the process of inspection of any device's lifespan and its impact on the environment?

a. Green inspection
b. Environment audit
c. Environment inspection
d. Environmental audit

11. Ironmongery is

a. Small metal items
b. Rust in metal
c. Metallic construction
d. Liquified metal

12. Automotive Engineering is mostly concerned with:

a. Vehicle manufacturing
b. Personal motivation
c. Vehicle speed
d. Automatic movement

13. What is the word that defines extracted metals from earth?

a. Mineral
b. Ore
c. Organic
d. Metamict

14. Which statement describes the pre-use phase?

a. It takes a lot of energy to produce aluminum.
b. Aluminum is fully recycled.
c. Steel is easily corroded
d. Aluminum lasts longer than steel.

15. What does mock-up mean?

a. 3D model without internal components
b. 3D model with internal components
c. Prototype
d. Computer model

25. Which of the following materials is the lightest?

a. Iron
b. Aluminum
c. steel
d. Copper

26. Which of the following metals is an alloy of tin?

a. Brass
b. Bronze
c. iron
d. Steel

27. Computational fluid dynamics are able to _____ complex problems involving fluid-fluid, fluid-solid or fluid-gas interaction

a. Eliminate
b. Replace
c. Interpret
d. Convert

28. In which of the following are the components of a wind turbine system arranged in the right order in which energy is converted?

a) Blades – rotor – electric generator – shaft
b) Blades – rotor – shaft – electric generator
c) Shaft – blades – rotor – electric generator
d) Electric generator – blades – rotor — shaft

29. _____describes the force that two surfaces exert on each other when they rub against each other

a) Friction
b) Tension
c) Compression
d) None of the above

30. Which of these metals will make an alloy ferrous?

a. Aluminum
b. Lead
c. Zinc
d. Iron

Answers (30 pts)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**