

Specialty (Specialty Code)	AUTOMOBILE REPAIR MECHANICS (ARM)
Centre No. & Name	
Candidate No.	
Candidate Name	

Mobile phones are NOT allowed in the examination room.

5130 MATERIALS TECHNOLOGY AND WORKSHOP PROCESSES1: MULTIPLE CHOICE QUESTION PAPER

1 hour 30 minutes

INSTRUCTIONS TO CANDIDATES

Read the following instructions carefully before you start answering the questions in this paper. Make sure you have a soft HB pencil and an eraser for this examination.

1. USE A SOFT HB PENCIL THROUGHOUT THE EXAMINATION.
2. DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

Before the examination begins:

3. Check that this question booklet is headed "Intermediate Level – 5130 MATERIALS TECHNOLOGY AND WORKSHOP PROCESSES 1.
4. Insert the information required in the spaces above.
5. Insert the information required in the spaces provided on the answer sheet using your HB pencil:

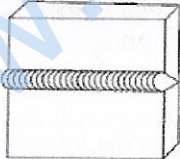
Candidate Name, Exam Session, Subject Code, Centre Number and Candidate Number.

Take care that you do not erase or fold the answer sheet or make any marks on it other than those asked for in these instructions.

How to answer the questions in this examination:

6. Answer ALL the 50 questions in this Examination. All questions carry equal marks.
7. Each question has FOUR suggested answers: A, B, C and D. Decide which answer is correct. Find the number of the question on the Answer Sheet and draw a horizontal line across the letter to join the square brackets for the answer you have chosen.
For example, if C is your correct answer, mark C as shown below:
[A] [B] [C] [D]
8. Mark only one answer for each question. If you mark more than one answer, you will score a zero for that question. If you change your mind about an answer, erase the first mark carefully, then mark your new answer.
9. Avoid spending too much time on any one question. If you find a question difficult, move on to the next question. You can come back to this question later.
10. Do all rough work in this booklet, using, where necessary, the blank spaces in the question booklet.
11. You must not take this booklet and the answer sheet out of the examination room. All question booklets and answer sheets will be collected at the end of the examination.

1. In a four high rolling mill, there are four rolls out of which
- A one is a working roll and three are back up rolls.
 - B two are working rolls and two are back up rolls.
 - C three are working rolls and one is a backup rolls.
 - D all of the four are working rolls.
-
2. Blanking and piercing operations can be performed simultaneously in a
- A simple die.
 - B progressive die.
 - C compound die.
 - D combination die.
-
3. The cross section of a chisel is usually
- A rectangular.
 - B square.
 - C hexagonal.
 - D octagonal.
-
4. Metal patterns are used for
- A small castings.
 - B large castings.
 - C complicated castings.
 - D large scale production of castings.
-
5. Which is the symbol for zinc?
- A Zc
 - B Zn
 - C Znc
 - D Zcn
-
6. Hardening is a heat treatment process involving
- A external heat treatment.
 - B external and internal heat treatment.
 - C internal heat treatment.
 - D forged heat treatment.
-
7. The process used to remove internal stress from a metal is
- A annealing.
 - B tempering.
 - C hardening.
 - D case hardening.
-
8. Bronze is an alloy of
- A copper and zinc.
 - B copper and tin.
 - C copper, tin and zinc.
 - D brass and tin.
-
9. Which of the following additives can improve high strength at high temperature?
- A Manganese.
 - B Magnesium.
 - C Nickel.
 - D Silicon.
-
10. What is the eutectoid structure of iron?
- A Pearlite.
 - B Austenite.
 - C Ferrite.
 - D Cementite.
-
11. Which of the following is not a property of copper alloy?
- A High electrical conductivity.
 - B High thermal conductivity.
 - C High strength.
 - D High fusibility.
-
12. Carburizing consist in
- A giving high carbon steel an outer layer of low carbon.
 - B adding the carbon content in steel.
 - C giving low carbon steel an outer layer of high carbon.
 - D adding carburized steel to copper.
-
13. Which of the following hardness test uses a diamond-pyramid indenter?
- A Brinell hardness.
 - B Webster hardness.
 - C Rockwell hardness.
 - D Vickers hardness.
-
14. Crankshafts are usually made from
- A cast iron.
 - B aluminium alloy.
 - C steel.
 - D copper.
-
15. Valves are preferably made from
- A low carbon steels.
 - B high carbon steels.
 - C silicon-chromium steels.
 - D medium carbon steels.
-
16. The low temperature low cost heat treatment without scaling of the component is known as
- a stress relieving.
 - b normalising.
 - c refining.
 - d tempering.
-
17. What is the meaning of the acronym PPE in relation to work-shop safety?
- A Personal protective equipment.
 - B Parts protecting engine.
 - C Positive protective electrolyte.
 - D Principal protecting environment.
-
18. Which of the following is a product that comes out of a blast furnace?
- A Cast iron.
 - B Pig iron.
 - C Iron ore.
 - D Steel.

19. One of the merits of an Aluminium alloy cylinder head as compared to a cast iron type is
- cheapness in cost.
 - lightness in weight.
 - heavier in weight.
 - hardness.
20. Density, Color, Size and Shape are the
- physical properties of metals.
 - chemical properties of metals.
 - thermal properties of metals.
 - mechanical properties of metals.
21. Nitriding is a
- case hardening process.
 - tempering process.
 - grain refining process.
 - full hardening process.
22. Two types of castings are
- mold and steel casting.
 - fluid and solid casting.
 - die and sand casting.
 - cast iron and steel casting.
23. Two types of forging methods are
- mold and iron forging.
 - cold and hot forging.
 - die and mould forging.
 - hand and power forging.
24. Hot drawing is a
- hot working process.
 - heat treatment process.
 - extrusion process.
 - cold rolling process.
25. The type of welding position shown below is?
- Flat.
 - Horizontal.
 - Vertical.
 - Over head.
- 
26. To protect your eyes you have to wear
- safety shoe.
 - an overall.
 - safety glasses.
 - a helmet.
27. While working on the spot welding machines should be worn.
- eye glasses
 - face shield
 - wrist watch
 - finger ring
28. To make a small indentation (center hole) in sheet metal, a is used.
- pencil
 - centre punch
 - needle
 - scriber
29. To bend sheet metal through 180° a is used.
- heavy duty hammer
 - ball peen hammer
 - mallet
 - sledge hammer
30. Hammers are classified by their weight and type of
- head.
 - size.
 - length.
 - height.
31. During drilling the work must be firmly held by
- adrill chuck.
 - amachine vice.
 - hand.
 - abench vice.
32. A machine is used to cut small pieces of sheet metal.
- bending
 - welding
 - notching
 - drilling
33. The composition of soft solder is
- lead 37% tin 63%.
 - lead 50% tin 50%.
 - lead 63% tin 37%.
 - lead 70% tin 30%.
34. In submerged arc welding, an arc is produced between the
- carbon electrode and the work piece.
 - metal electrode and the work piece.
 - bare metal electrode and the work piece.
 - two tungsten electrodes and the work piece.
35. When the molten metal is fed in the cavity of a metallic mould by gravity, the method of casting is known as
- die casting.
 - slush casting.
 - permanent mould casting.
 - centrifugal casting.

36. In blanking operation, the clearance is provided on
 A punch.
 B die.
 C half on the punch and half on the die.
 D either on the punch or die.

37. Strength of materials is
 A the ability to resist heat.
 B how tough it is.
 C a measure of its hardness.
 D it's resistance to change of form and to breaking.

38. A suitable material for contact breaker points would be
 A copper.
 B brass.
 C nickel.
 D tungsten.

39. High pressure fuel pipes are made of
 A rubber.
 B Heavy guage steel.
 C copper.
 D brass.

40. An example of a ferrous metal is
 A Aluminium.
 B Bronze.
 C Steel.
 D Tin.

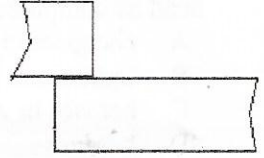
41. When two or more metals are mixed together to improve their properties, they are said to be
 A galvanised.
 B tempered.
 C alloyed.
 D modernised.

42. The synchronizer cone is made of
 A copper.
 B aluminium.
 C bronze.
 D cast iron.

43. A suitable flux for bracing mild steel is
 A caustic soda.
 B borax.
 C killed spirit.
 D resin.

Which type of joint does the sketch below represent?

- A Corner joint.
- B Lap seam joint.
- C Butt joint.
- D Folder seam joint.

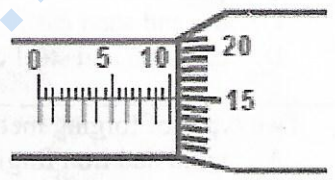


45. Of what material are Antifriction bearings made?
 A Case hardened alloy steel.
 B Pig iron.
 C Bronze.
 D Brass.

46. The purpose of a clearance angle on a cutting tool is to
 A give the tool burred edges.
 B wedge the tool on the work.
 C give the cutting angle.
 D eliminate rubbing between the work and the tool.

47. What is the reading of the micrometer in the figure below?

- A 10.15mm
- B 10.65mm
- C 10.015
- D 10.00

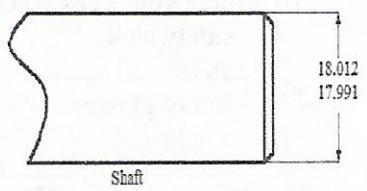


48. To tighten a nut or a bolt to a predetermined force, we use a
 A torque screw.
 B screw driver.
 C torque wrench.
 D screw driver a d spanner.

49. Nuts are blocked in position by the use of
 A flat washer.
 B plain bush.
 C spring washer.
 D woodruff key.

50. What is the tolerance limit of the shaft given in the figure below?

- A 1.001
- B 2.101
- C 0.021
- D 3.001



GO BACK AND CHECK YOUR WORK