Level 3 End-point Assessment for ST0432/AP04 Engineering Fitter (9335-22)

August 2022 Version 1.1

Sample Multiple Choice Test

Sample paper, multiple choice mark sheet and mark scheme

Version and date	Change detail	Section
V1 May 2022	1st published	
V1.1 August 2022	Published with additional 15 questions	

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1 Introduction

What is in this document

This document contains the Sample test for the Engineering Fitter Multiple Choice EPA.

How to use the forms

The following documents are included;

- Sample questions
- Multiple choice answer sheets
- Mark schemes

Apprentices should be provided with the sample questions and the mark sheets.

The mark scheme is to be used by employers/training providers/tutors to mark the completed tests.

9335-320 End-point Assessment – Multiple choice test (Sample)

Version 1.1 – August 2022

Test duration: 60 minutes

You should have the following for this test

- a pen with black or blue ink
- multiple-choice/short answer questions answer sheets
- non-programmable calculator

Read the following notes before you answer any questions:

- Attempt all questions
- If you find a question difficult, leave it and return to it later

This paper contains 30 multiple choice questions worth 1 mark each.

This question paper is the property of City & Guilds.

How to complete the multiple choice answer sheet

Each multiple choice question shows four possible answers (lettered 'a', 'b', 'c' and 'd'); only one is correct.

Decide which one is correct and mark your answer on the answer sheet with your pen.

For example if you decide 'b' is correct, mark your answer with a cross like this:

1 a ☐ b ☒ c ☐ d ☐

If you change your answer, cancel your first choice by filling in the box then put a cross in the answer which you have now decided is correct like this:

1 a ☐ b ■ c ☒ d ☐

9335-320 End-point Assessment – Multiple-choice test (Sample)

1. Which of the following is classified as a ferrous material?

    a. Glass.
    b. Metal.
    c. Ceramic.
    d. Polymer.

2. What is the classification given to a material that is made up of two different materials?

    a. Metallic.
    b. Ceramic.
    c. Composite.
    d. Thermoplastic.

3. An engineer has been asked to source a material that can undergo large permanent deformations in compression.

    Which factor is the **most** important?

    a. Hardness.
    b. Durability.
    c. Malleability.
    d. Machinability.

4. What is the **main** reason why steel is used in the construction of bridges?

    a. It is very malleable.
    b. It is highly resistant to corrosion.
    c. It is one of the hardest materials.
    d. It has a high strength to weight ratio.

5. Ceramic is **mainly** used in the production of high-voltage electrical components because it:

    a. conducts heat
    b. acts as an insulator
    c. conducts electricity
    d. withstands extreme weather.

6. What is the **main** reason Zinc is used as a coating for metal objects?

    a. It increases the object's strength.
    b. It increases the conductivity of the object.
    c. It reduces cost by eliminating the need to paint the object.
    d. It provides the object with a protective coating against corrosion.

7. A company plans to use hydraulic fluid.

What is the **final** step that should be taken as part of the risk management process?

a. Provide Personal Protective Equipment and training.
b. Provide suitable supervision and training.
c. Isolate and eliminate the hazard.
d. Isolate and reduce the hazard.

8. An engineer needs to carry out a task that requires a permit to work. The permit has been delayed.

What **should** they do?

a. Wait for the permit to be issued and signed off before they begin.
b. Carry out a risk assessment and complete the task without the permit.
c. If they have done this work before, complete the task without the permit.
d. Carry out the task without the permit and then complete the relevant paperwork.

9. Which tool would give the **most** accurate measurement for a gap of 0.5 mm to 1 mm?

a. Vernier.
b. Protractor.
c. Feeler gauge.
d. Engineer's level.

10. What is the **most** suitable tool for removing an M12 bolt?

a. Pliers.
b. Spanner.
c. Pipe Grips.
d. Screwdriver.

11. Which of the following is **not** required when using a power tool?

a. Checking the power supply voltage using a multimeter.
b. Reading manufacturer's operating manuals.
c. Receiving appropriate training.
d. Carrying out a risk assessment.

12. What is the purpose of an equipment interlock?

    a. To stop a machine during production.
    b. To connect two or more machines together.
    c. To lock off a machine prior to a maintenance activity.
    d. To prevent a machine from operating unintentionally.

13. What piece of measuring equipment has an 'anvil' and a 'barrel'?

    a. Rule.
    b. Vernier.
    c. Micrometer.
    d. Tape measure.

14. What is a caliper used to measure?

    a. Heat.
    b. Angles.
    c. Pressure.
    d. Dimensions.

15. Which of the following is **best** suited to assist in the mating of two or more components?

    a. Chalk.
    b. Lasers.
    c. Scribed lines.
    d. Engineer's blue.

16. What type of tool is **most** suitable for cutting a curve in a 5 mm thick piece of steel plate?

    a. Jigsaw.
    b. Guillotine.
    c. Utility knife.
    d. Reciprocating saw.

17. What is the **safest** technique to drill a hole in a piece of 8 mm thick plate?

    a. Use a pedestal drill and secure the piece firmly in the vice.
    b. Use a portable drill and secure the piece firmly with one hand.
    c. Use a pedestal drill and secure the piece firmly with one hand.
    d. Use a portable drill and secure the piece in a vice on a workbench.

18. What is the **main** reason for accurately cutting a piece of material in readiness for production?

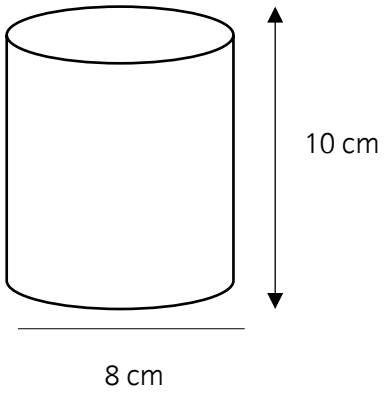
    a. To ensure components fit together on assembly and avoid waste.
    b. To ensure others do not make the same mistakes and avoid waste.
    c. To ensure components are manufactured in the shortest possible time and the budget of the workpiece is met.
    d. To ensure components fit together on assembly and are manufactured in the shortest possible time.

19. The following measurements were taken from various points across a shaft:
4, 5, 6 ,9, 9, 9 (mm)

What is the **mean** measurement of the shaft?

a. 4 mm.
b. 5 mm.
c. 7 mm.
d. 9 mm.

20. Calculate the volume of this cylinder to 1 significant figure.



a. 201 cm^3.
b. 500 cm^3.
c. 2010 cm^3.
d. 2514 cm^3.

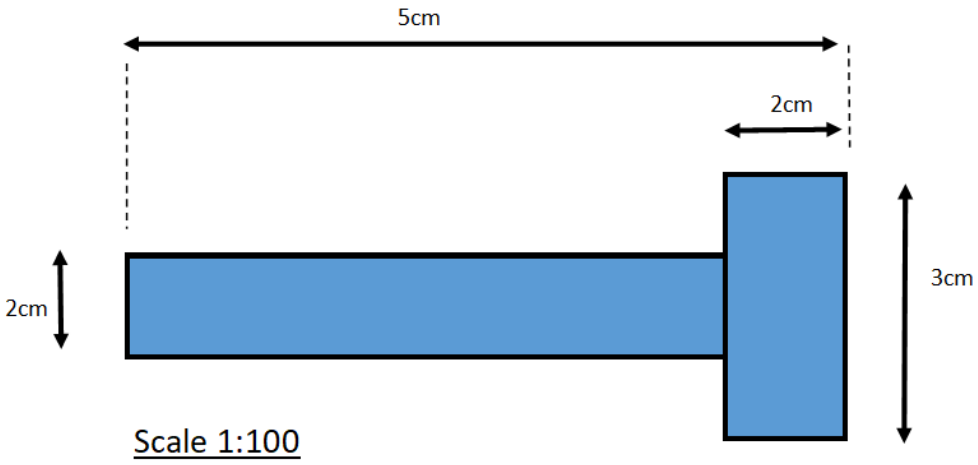
21. A component has a nominal width of 25 mm ± 1.6 mm.

What is the **minimum** acceptable width of the component?

a. 23.4 mm.
b. 24.2 mm.
c. 25.0 mm.
d. 26.6 mm.

22. The drawing below shows a component to be manufactured. The dimensions shown are the actual measurements taken from the drawing.

What will the overall length of the finished component be in metres?



a. 0.05 m.
b. 5 m.
c. 50 m.
d. 500 m.

23. What type of symbol is this?

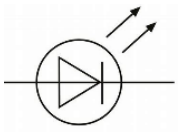


Image of Symbol – Published Anonymously – http://www.clipartbest.com/clipart-9ip6aBr7T

a. Resistor.
b. Capacitor.
c. Transformer.
d. Light emitting diode.

24. What does this symbol represent?



a. Pump.
b. Valve.
c. Cylinder.
d. Actuator.

25. Which of the following is **not** a requirement of the Control of Substances Hazardous to Health (COSHH) regulations?

a. To send managers on an approved training programme.
b. To control access to hazardous substances.
c. To carry out regular health surveillance.
d. To carry out risk assessments.

26. An engineer needs to carry out welding work.

What is the **most** important action to ensure the safety of others?

a. Post warning signs.
b. Put screens up around the work area.
c. Provide welding goggles for everyone.
d. Ensure correct fire extinguishers are available.

27. An engineer needs to use an angle grinder on the shop floor where other workers are in the vicinity.

Which of the following ensures the engineer's own and others' safety in this situation?

a. Wearing goggles and overalls.
b. Erecting screens and wearing goggles.
c. Erecting screens and displaying a warning notice.
d. Displaying a warning notice and taping off the area.

28. A faulty piece of equipment has caused a major accident at work.

What action **must** be taken?

a. Repair the equipment and return it to service after carrying out safety checks.
b. Remove the equipment from service and retain it in its faulty state for inspection by the line manager.
c. Dismantle the equipment to prevent further use and ensure that the dangerous components are decommissioned.
d. Remove the equipment from service and retain it in its faulty state for inspection by the Health and Safety Executive.

29. An engineer sees a colleague working unsafely.

What is the **correct** action to take?

a. Inform the colleague and report it to the supervisor.
b. Finish the current task and then inform the colleague
c. Inform the colleague and show them how to work safely.
d. Finish the current task and then report it to the supervisor.

30. When a Health and Safety officer is conducting a risk assessment, they do **not** need to consider:

a. operator competence
b. the severity of any hazard
c. the expense to the company
d. the probability of any hazard occurring.

9335-320 End-point Assessment –Multiple choice test (Sample) mark sheet

Candidate name: *First name* *Last name*

(Please print)

Date of test: dd / mm / yy

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

Number of correct answers

Section A:	/ 6	Minimum of 3
Section B:	/ 6	Minimum of 4
Section C:	/ 6	Minimum of 3
Section D:	/ 6	Minimum of 3
Section E:	/ 6	Minimum of 5
Total:		**18 Marks to Pass** **(including above rules)**

9335-320 End-point Assessment Multiple choice test (Sample) – Mark Scheme

Grading: Pass 18 marks (60%), plus the additional section criteria

Question no	Key
Section A	
1	B
2	C
3	C
4	D
5	B
6	D
Section B	
7	A
8	A
9	C
10	B
11	A
12	D
Section C	
13	C
14	D
15	D
16	A
17	A
18	A
Section D	
19	C
20	B
21	A
22	B
23	D
24	B
Section E	
25	A
26	B
27	B
28	D
29	A
30	C

The pass mark requirements stated below cover a test format of 30 questions.

Section	Additional pass mark requirements	Rules
A	a minimum of **three** marks for K1	Six questions must assess knowledge statements **K1**: Materials used in components/assemblies their use and application considerations
B	a minimum of **four** marks for K4	Six questions must assess the knowledge statements **K4**: safe use of tools and choosing the right tool
C	a minimum of **three** marks for K6	Six questions must assess the knowledge statements **K6**: techniques for measuring, marking, cutting and drilling materials to the required size.
D	a minimum of **three** marks for K7	Six questions must assess knowledge statements **K7**: and require apprentices to conduct calculations or analyse diagrams.
E	a minimum of **five** marks for K11	Six questions must relate to the knowledge statements **K11**: the health & safety.