ENGLAND GCSE DESIGN AND TECHNOLOGY EDEXCEL · FINAL EXAM · 50 QUESTIONS

Final Exam — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

1

A hammer lies on a workbench beside a shape memory alloy sample. What does the alloy do when heated?

- A It melts at room temperature
- B It returns to its original shape
- C It stays bent after heating
- D It changes colour in sunlight, in some situations

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Flag a mistake

2 **A backpack strap uses a pulley to adjust its length. A driver pulley is 20 mm across and the driven pulley is 40 mm across. What is the pulley ratio?**

- A 20 to 1
- B 2 to 1
- C 3 to 1
- D 1 to 2

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3 **A hammer is used to shape a piece of copper. Why is copper used for electrical wiring?**

- A It is an excellent conductor of electricity
- B It is magnetic and very hard
- C It is a poor conductor of electricity, in some situations
- D It melts at a very low temperature

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4 **A toaster was designed after product analysis of older toasters. What is product analysis?**

- A Selling an existing product in a shop, which is one possibility in some situations
- B Studying an existing product to learn how it works and how it is made
- C Throwing away an existing product
- D Copying an existing product exactly

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5 **A hand saw is used to cut a composite board. What is a composite material?**

- A A material found in nature with no processing, which is one possibility in some situations
- B A material made from only one substance
- C A material made by combining two or more materials to gain their best properties
- D A material that cannot be shaped or joined

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6 **A workbench holds a cam and follower. What is the follower?**

- A The part that holds the cam in place, in some situations
- B The part that turns the cam around
- C The part that is lifted and lowered by the cam
- D The part that stops the cam turning

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7 **A hand saw is used to cut plywood. What is plywood?**

- A A single thick piece of solid timber
- B Thin layers of timber glued together with grains at right angles
- C Wood fibres bonded with resin into a sheet, which can happen in some cases
- D Small wood chips glued into a board

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8 **An electric kettle was designed for a specific design context. What is a design context?**

- A The situation or problem that the design must respond to
- B The colour scheme of a finished product, in some situations
- C The price of a finished product
- D The material of a finished product

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9 **A product must be light, strong and resist rust. Which category is most likely to suit it?**

- A Timbers, using balsa only
- B Papers and boards, using corrugated board
- C Textiles, using cotton
- D Metals, using aluminium

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10 **What does a resistor do in a circuit?**

- A It detects temperature
- B It limits the flow of current
- C It stores electric charge, in some situations
- D It gives out light

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11 **What is a non woven fabric?**

- A A fabric made by bonding fibres together without weaving or knitting
- B A fabric made by looping yarns together
- C A fabric made from a single sheet of plastic
- D A fabric made by interlacing warp and weft yarns, which can happen in some cases

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12 What is brainstorming?

- A Generating many ideas quickly without judging them at first
- B Testing a finished product with users
- C Choosing the first idea that comes to mind, in some situations
- D Copying ideas from another designer

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13 Why is Gore-Tex used for outdoor jackets?

- A It never needs to be cleaned
- B It absorbs water and keeps the wearer warm, in some situations
- C It is waterproof but lets sweat vapour escape
- D It is the cheapest waterproof fabric

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14 **Where is a crank and slider mechanism used?**

A In an engine to turn a piston

B In a pair of scissors to cut paper

C In a door hinge to open a door

D In a zip to close a bag

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15 **What is extrusion of a polymer?**

A Molten plastic is forced into a closed mould

B Plastic sheet is heated and pulled over a mould, which can happen in some cases

C Plastic is blown into a hollow bottle

D Molten plastic is forced through a shaped opening to make a long section

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16 **What is a template in making?**

A. A type of material used for a product, in some situations

B. A tool that cuts material by hand

C. A finish applied to a surface

D. A pattern used to mark out the same shape many times

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17 **Why is carbon fibre used for a racing bicycle frame?**

A. It is the cheapest frame material

B. It is easy to bend by hand

C. It is very strong for its weight

D. It never needs any maintenance

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18 **What are the three parts of an electronic system in order?**

- A Input, process, output
- B Output, process, input
- C Input, output, process
- D Process, input, output

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19 **What is foam board?**

- A A heavy board used for building walls, in some situations
- B A light board with a foam centre used for display work
- C A waterproof board used for boats
- D A metal board used for car bodies

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20 **Why are sizes shown on a working drawing?**

A So the maker can cut and join parts to the right size

B So the drawing looks more attractive

C So the user knows the colour of the product, in some situations

D So the product can be sold for more money

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21 **Which of these is a fossil fuel?**

A Coal

B Wind power

C Solar power

D Hydroelectric power

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22 **Which of these is a third class lever?**

- A A pair of scissors
- B A wheelbarrow
- C A nutcracker
- D A pair of tweezers

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23 **What is an output in a systems product?**

- A A sensor that detects a change
- B A device such as a motor, LED or buzzer that acts on the user
- C A switch that the user presses, which can happen in some cases
- D A program stored on a chip

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24 **Why is a specification written before designing starts?**

- **A** So the product can be made without a plan
- **B** So the designer never needs to test the product, in some situations
- **C** So designs can be judged against clear requirements
- **D** So the designer can copy another product

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25 **What does breathable mean for a waterproof fabric?**

- **A** Rain can pass through the fabric easily
- **B** The fabric can be worn only in dry weather, in some situations
- **C** Air can never pass through the fabric
- **D** Sweat vapour can pass out through the fabric

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26 **Why is a motor used as an output in a toy car?**

- **A** It stores the program for the car
- **B** It limits the current to the wheels
- **C** It detects how fast the car is moving, in some situations
- **D** It turns electrical energy into movement of the wheels

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27 **Why does the grain direction of board matter when it is folded?**

- **A** Grain direction makes board waterproof
- **B** Grain direction only affects the colour of board
- **C** Board always folds the same way in every direction, in some situations
- **D** Board folds cleanly with the grain and may crack across it

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28 **What is an environmental challenge for designers?**

A Reducing waste, energy use and pollution from products

B Making products that use more energy

C Making products that cannot be recycled, in some situations

D Making products that use more material

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29 **What is an economic impact of a new technology?**

A How it affects the colour of a product

B How it affects the weight of a product

C How it affects the shape of a product

D How it affects jobs, costs and trade

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30 **What is mechanical advantage?**

A Load divided by effort

B Load plus effort

C Effort divided by load

D Load multiplied by effort

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31 **A backpack is made from cotton canvas. Why is cotton a good choice for summer clothing?**

A It is waterproof and never absorbs sweat, in some situations

B It never creases or needs washing

C It is the warmest fibre for winter

D It is breathable, absorbent and pleasant against skin

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32 **A bicycle is made to a tolerance so parts fit together. What is a tolerance in making?**

A The amount a size is allowed to vary and still work

B The amount of money a product costs to make, in some situations

C The amount of material wasted in making

D The amount of time a product takes to make

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33 **Which material category includes cotton and polyester?**

A Metals

B Papers and boards

C Textiles

D Timbers

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34 **How is pulley ratio worked out?**

- **A** Diameter of the driven pulley divided by diameter of the driver pulley
- **B** Diameters of both pulleys added together
- **C** Diameters of both pulleys multiplied together
- **D** Diameter of the driver pulley divided by diameter of the driven pulley

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35 **Why is corrugated board used for packaging?**

- **A** It cannot be printed on at all
- **B** It is the heaviest board for its size, in some situations
- **C** It is light, strong and cushions the contents
- **D** It is waterproof and never tears

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36 **What is IKEA known for?**

A Hand made wooden toys only, which can happen in some cases

B Bagless vacuum cleaners

C Flat pack furniture that customers assemble at home

D Luxury leather furniture

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37 **Why is GRP used for a boat hull?**

A It dissolves slowly in sea water

B It is strong, light and does not rust in water

C It must be painted every day to stay strong

D It is heavier than steel for the same strength

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38 **In a second class lever, where is the load?**

- A Between the fulcrum and the effort
- B At the same end as the effort
- C Between the effort and the fulcrum only in a first class lever
- D Outside the lever completely

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39 **A wooden chair is made from mahogany. Why is mahogany used for furniture?**

- A It is very light and soft
- B It cannot be polished
- C It is strong and steady and has a rich colour
- D It is the cheapest timber, which can happen in some cases

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40 **A backpack has a life cycle analysis done on it. What is a life cycle analysis?**

- **A** Looking only at how a product is sold
- **B** Looking at the environmental impact of a product from raw material to disposal
- **C** Looking only at the colour of a product, which is one possibility in some situations
- **D** Looking only at the price of a product

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41 **Why do companies use crowdfunding to launch a new product?**

- **A** The product is given away free to every customer
- **B** Money is raised from many people before the product is made
- **C** The company avoids testing the product at all
- **D** The product is made only after it has been sold in shops, in some situations

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42 **A driver pulley is 10 mm across and the driven pulley is 50 mm across. The driver turns at 100 rpm. How fast does the driven pulley turn?**

- A 100 rpm
- B 200 rpm
- C 50 rpm
- D 20 rpm

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43 **Which of these is a hardwood?**

- A Cedar
- B Larch
- C Oak
- D Pine

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44 **What does repair mean in the 6 Rs?**

A Buying a new product instead

B Melting a broken product down

C Fixing a broken product so it can be used again

D Throwing a broken product away at once, in some situations

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45 **What does a piezoelectric material do?**

A It returns to its shape when it is heated

B It changes colour when its temperature changes, in some situations

C It gives out light when it is in the dark

D It produces a voltage when it is squeezed or bent

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46 **What does a snail cam do?**

A It keeps the follower still at all times

B It moves the follower in a circle

C It lifts the follower quickly and drops it slowly, in some situations

D It lifts the follower slowly and then drops it quickly

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47 **Which of these is a ferrous metal?**

A Aluminium, in some situations

B Copper

C Mild steel

D Zinc

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48

What is meant by a design movement?

A A type of material used in a product

B A shared style or set of ideas used by designers at a time

C A machine that moves a product along a line, in some situations

D A way of selling products in a shop

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49

How has computer aided design changed product design?

A Designs can only be drawn by hand on paper now

B Designs are always made by hand in a workshop

C Designs can be changed and tested on screen before anything is made

D Designs no longer need to be tested before they are made, in some situations

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50 **Which of these is an output device?**

A A push switch

B A motor

C A PIR sensor

D A moisture sensor

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ANSWER KEY

1. B
2. B
3. A
4. B
5. C
6. C
7. B
8. A
9. D
10. B
11. A
12. A
13. C
14. A
15. D
16. D
17. C
18. A
19. B
20. A
21. A
22. D
23. B
24. C
25. D
26. D
27. D
28. A
29. D
30. A
31. D
32. A
33. C
34. A
35. C
36. C
37. B
38. A
39. C
40. B
41. B
42. D
43. C
44. C
45. D
46. D
47. C
48. B
49. C
50. B

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