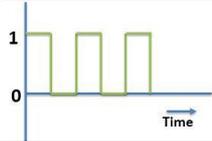


Year 10 GCSE Design & Technology Assessment Questions

	Question	Answer
1	Why is it better for the environment to use softwood rather than hardwood for paper pulp?	Because softwood trees grow more quickly than hardwood trees (30 years compared to 100 years), so the raw materials can be replaced more quickly.
2	What unit of measurement is used to measure the thickness of paper?	Grams per square metre.
3	Why is corrugated cardboard a good material choice for packaging a product?	The flutes between the two layers absorb shock if the packaging is damaged, this helps protect the product inside the package.
4	Which common board is used to make the lids for take away containers?	Foil lined board.
5	What is foam core board often used for?	Model making.
6	What is the difference between a hardwood tree and a softwood tree?	Hardwood = slow growing, deciduous (loses leaves in winter), wood is harder to work with. Softwood = relatively fast growing, coniferous (keeps leaves in winter), wood is easier to work with.
7	Which group of woods do oak and ash belong to?	Hardwoods.
8	Which group of woods do pine and larch belong to?	Softwoods.
9	Which group of woods do mdf and plywood belong to?	Manufactured boards.
10	What is the standard size of sheets of manufactured board?	2440mm x 1220mm.
11	What are the names of the three groups of metals?	Ferrous, non-ferrous and alloys.
12	What does the word ferrous mean?	Contains iron.
13	What does the word alloy mean?	A mixture of at least one pure metal and another element.
14	Give an example of an alloy.	Brass, stainless steel, or high speed steel.
15	What are the names of the two groups of polymers?	Thermoforming and thermosetting.
16	Why is melamine formaldehyde a good choice for a kitchen work surface.	It is a thermosetting polymer which means that it is heat resistant so would not be damaged by, for example, a hot saucepan.
17	The name of which plastic can be shortened to PVC?	Polyvinyl chloride.
18	Give two examples of natural fibres.	Wool and cotton.
19	What is the fabric elastane often used to make?	Swimsuits and sportswear.
20	What is the advantage of plain weave over other weaves?	It is simpler, stronger and cheaper to produce than other weaves.
21	How has automation affected industry today?	There are less manual jobs for unskilled workers due to robots being able to perform these tasks.
22	What is crowdfunding?	Crowdfunding is an internet based way to gain investment from a large number of people giving a small amount of money.
23	Who owns a cooperative?	The people who work for the company also own a share in it.
24	Give 3 examples of non-finite energy sources.	Solar, wind, tidal.
25	What is carbon offsetting?	Carbon offsetting is offsetting negative processes, such as burning fossil fuels, by investment in positive activities such as planting trees.
26	Technology push is ...	When new discoveries are made which are then incorporate into a product.
27	What is inclusive design?	This is when products are made to be used by the

		widest range of people p[ossible, usually referred to as the 5 th -95 th percentile
28	FMS is an abbreviation for what.	Flexible Management System
29	Explain what Just in Time manufacturing means.	JIT is when manufacturers are able to respond to customers needs/orders, by making the product when needed, rather than stockpiling goods or components.
30	What is planned obsolescence?	Ensuring a product or service only performs or lasts for a certain amount of time before it needs replacing or updating is planned obsolescence.
31	What does a turbine do in energy generation?	Fossil fuels are heated to create superheated water. The resulting steam is then used to turn a turbine which is linked to a generator to provide power.
32	Why could nuclear power be considered renewable?	Nuclear power requires such a small amount of the finite resource Uranium it is unlikely to ever run out, thus you can argue that it is renewable.
33	How does a flywheel store energy?	Kinetic energy is stored when the flywheel rotates.
34	A PP3 battery produces 9 Volts. How many cells does it contain?	6
35	A diamond shape in a systems diagram is used to show what?	A decision needs to be made
36	A buzzer is a type of what in a system?	Output
37	Draw the graphical form of a digital signal.	
38	Draw an arrow to represent reciprocating movement.	
39	What is the formula used to calculate mechanical advantage?	$MA = \text{Load}/\text{Effort}$
40	Give an example of a third class lever	Tweezers
41	What sort of movement does a pear shaped cam produce?	A rapid rise and fall followed by a long dwell
42	Why are knockdown fittings used in flat pack furniture?	Knock down fittings are temporary, standardised components which do not require specialist tools or skills to use them.
43	Define iterative design.	Iterative design is a cyclic approach to design. Each iteration of the design is tested and evaluated, which leads to a new iteration.
44	What is anthropometrics?	Anthropometrics is the study of human measurements and data, which then informs designs.
45	What did Harry Beck design?	The London underground map in the 1930's
46	Vivienne Westwood is best known for what type of music and fashion.	Punk
47	James Dyson's company is best known for what product.	The bag less vacuum using cyclonic technology.
48	What are the 3 views used when drawing an orthographic projection?	Front, end and plan.
49	Define tolerance in terms of DT and give a specific example.	The tolerance in DT is the amount of error that is allowed for a given task. For example the size that a component for draw can be $\pm 1\text{mm}$
50	Why do designers make models before they produce the final product?	It is a quick, simple and cheap way to test ideas and identify weaknesses.