

## ENGLISH FOR ENGINEERING

### III Provide appropriate words for the explanations below (7)

1. to control something, usually to use its power .....
2. to set right the undesirable situation.....
3. in advance (preposition) .....
4. controlling a the situation rather than just responding to it .....
5. increase rapidly.....
6. shocked, horrified.....
7. to buy something.....
8. not perfect, containing mistakes .....
9. especially, most importantly .....
10. someone who has done something wrong.....
11. the process of burning .....
12. emphasize, point out .....
13. a person or organization responsible for making certain that companies obey particular standards .....
14. selling goods in large amounts at low prices to shops and businesses.....
15. a company that is owned by a larger company.....
16. to try to deal with someone or something.....
1. to watch and check continuously.....
2. the second of the three load levels; the other two are base and peak load .....
3. apparatus of the latest technological level .....
4. a company owned by a parent company .....
5. a plan of action chosen by a business or firm .....
6. to support, defend, fight for a person, idea .....
7. something that cannot be legally avoided or stopped (adjective) .....
8. a charge or list of charges for goods entering a country, taxes .....

### IV Complete the sentences using prepositions (3 p):

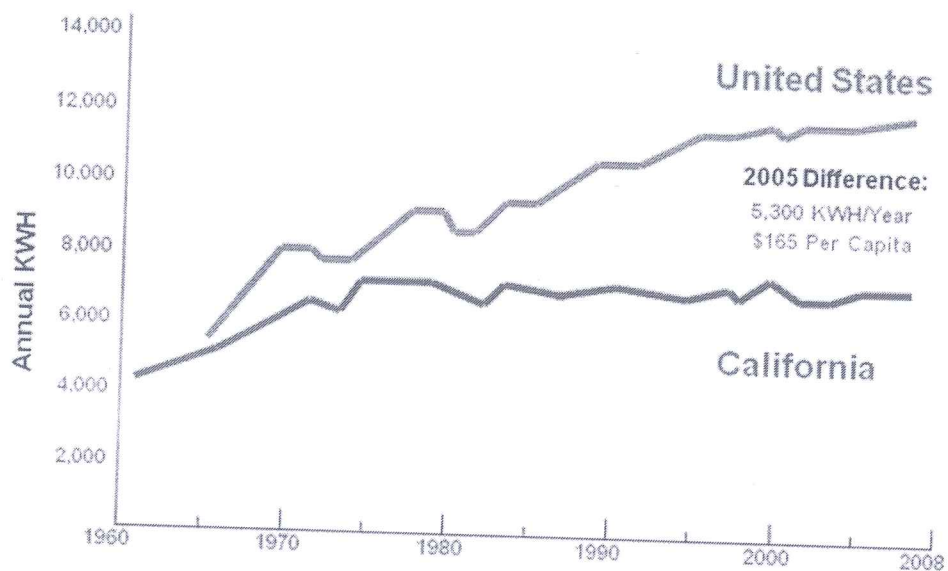
1. They are heavily involved \_\_\_\_\_ emission trading.
2. 40% of our generating capacity is accounted \_\_\_\_\_ by hydro and renewables.
3. We will draw \_\_\_\_\_ a relevant agenda for the meeting.
4. They have merged \_\_\_\_\_ a new organization called Consumer Focus.
5. The grid fees that the operators charge \_\_\_\_\_ using the networks are controlled.
6. Unfortunately, most of the gas reserves will be used \_\_\_\_\_ over the next ten to twenty years.
7. Many states have set \_\_\_\_\_ regulators.
8. Electricity makes its way \_\_\_\_\_ the customer through the system of transmission towers and overhead lines.
9. It is \_\_\_\_\_ no means certain that there will be a shortage of gas.

10. Unfortunately, here has been a sudden and complete breakdown \_\_\_\_\_ power supply.
11. The environmental programme will be of benefit to the public \_\_\_\_\_ large.
12. This organization looks \_\_\_\_\_ consumer interests.
- 13.

**IV Complete the sentences using prepositions (2 p):**

17. We need to harmonize the terms \_\_\_\_\_ which we do business with our suppliers.
18. He went \_\_\_\_\_ great technical detail about power surges in his company.
19. This is a company \_\_\_\_\_ its own right.
20. Wind, sun and water are not always \_\_\_\_\_ our disposal as the renewable sources of energy.

**V The graph below shows the Electricity consumption per capita in the United States and California from 1960 to 2008. Summarise the information by reporting the main features and make comparisons where relevant. (7p)**



**Per Capita Electricity Consumption:  
United States v. California**

(Source: California Energy Commission)

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## ENGLISH FOR ENGINEERING – MID TERM TEST

NAME: .....

An emerging discipline called neuroaesthetics is seeking to bring scientific objectivity to the study of art, and has already given us a better understanding of many masterpieces. The blurred imagery of Impressionist paintings seems to stimulate the brain's amygdala, for instance. Since the amygdala plays a crucial role in our feelings, that finding might explain why many people find these pieces so moving.

Could the same approach also shed light on abstract twentieth-century pieces, from Mondrian's geometrical blocks of colour, to Pollock's seemingly haphazard arrangements of splashed paint on canvas? Sceptics believe that people claim to like such works simply because they are famous. We certainly do have an inclination to follow the crowd. When asked to make simple perceptual decisions such as matching a shape to its rotated image, for example, people often choose a definitively wrong answer if they see others doing the same. It is easy to imagine that this mentality would have even more impact on a fuzzy concept like art appreciation, where there is no right or wrong answer.

Angelina Hawley-Dolan, of Boston College, Massachusetts, responded to this debate by asking volunteers to view pairs of paintings - either the creations of famous abstract artists or the doodles of infants, chimps and elephants. They then had to judge which they preferred. A third of the paintings were given no captions, while many were labelled incorrectly -volunteers might think they were viewing a chimp's messy brushstrokes when they were actually seeing an acclaimed masterpiece. In each set of trials, volunteers generally preferred the work of renowned artists, even when they believed it was by an animal or a child. It seems that the viewer can sense the artist's vision in paintings, even if they can't explain why.

Robert Pepperell, an artist based at Cardiff University, creates ambiguous works that are neither entirely abstract nor clearly representational. In one study, Pepperell and his collaborators asked volunteers to decide how powerful they considered an artwork to be, and whether they saw anything familiar in the piece. The longer they took to answer these questions, the more highly they rated the piece under scrutiny, and the greater their neural activity. It would seem that the brain sees these images as puzzles, and the harder it is to decipher the meaning, the more rewarding is the moment of recognition.

And what about artists such as Mondrian, whose paintings consist exclusively of horizontal and vertical lines encasing blocks of colour? Mondrian's works are deceptively simple, but eye-tracking studies confirm that they are meticulously composed, and that simply rotating a piece radically changes the way we view it. With the originals, volunteers' eyes tended to stay longer on certain places in the image, but with the altered versions they would flit across a piece more rapidly. As a result, the volunteers considered the altered versions less pleasurable when they later rated the work.

In a similar study, Oshin Vartanian of Toronto University asked volunteers to compare original paintings with ones which he had altered by moving objects around within the frame. He found that almost everyone preferred the original, whether it was a Van Gogh still life or an abstract by Miro. Vartanian also found that changing the composition of the paintings reduced activation in those brain areas linked with meaning and interpretation.

In another experiment, Alex Forsythe of the University of Liverpool analysed the visual intricacy of different pieces of art, and her results suggest that many artists use a key level of detail to please the brain. Too little and the work is boring, but too much results in a kind of 'perceptual overload', according to Forsythe. What's more, appealing pieces both abstract and representational, show signs of 'fractals' - repeated motifs recurring in different scales. Fractals are common throughout nature, for example in the shapes of mountain peaks or the branches of trees. It is possible that our visual system, which evolved in the great outdoors, finds it easier to process such patterns.

It is also intriguing that the brain appears to process movement when we see a handwritten letter, as if we are replaying the writer's moment of creation. This has led some to wonder whether Pollock's works feel so dynamic because the brain reconstructs the energetic actions the artist used as he painted. This may be down to our brain's 'mirror neurons', which are known to mimic others' actions. The hypothesis will need to be thoroughly tested, however. It might even be the case that we could use neuroaesthetic studies to understand the longevity of some pieces of artwork. While the fashions of the time might shape what is currently popular,



works that are best adapted to our visual system may be the most likely to linger once the trends of previous generations have been forgotten.

It's still early days for the field of neuroaesthetics - and these studies are probably only a taste of what is to come. It would, however, be foolish to reduce art appreciation to a set of scientific laws. We shouldn't underestimate the importance of the style of a particular artist, their place in history and the artistic environment of their time. Abstract art offers both a challenge and the freedom to play with different interpretations. In some ways, it's not so different to science, where we are constantly looking for systems and decoding meaning so that we can view and appreciate the world in a new way.

Choose the correct letter, **A, B, C or D**.

1. In the second paragraph, the writer refers to a shape-matching test in order to illustrate
  - A ☐ the subjective nature of art appreciation.
  - B ☐ the reliance of modern art on abstract forms.
  - C ☐ our tendency to be influenced by the opinions of others.
  - D ☐ a common problem encountered when processing visual data.
2. Angelina Hawley-Dolan's findings indicate that people
  - A ☐ mostly favour works of art which they know well.
  - B ☐ hold fixed ideas about what makes a good work of art.
  - C ☐ are often misled by their initial expectations of a work of art.
  - D ☐ have the ability to perceive the intention behind works of art.
3. Results of studies involving Robert Pepperell's pieces suggest that people
  - A ☐ can appreciate a painting without fully understanding it.
  - B ☐ find it satisfying to work out what a painting represents.
  - C ☐ vary widely in the time they spend looking at paintings.
  - D ☐ generally prefer representational art to abstract art.
4. What do the experiments described in the fifth paragraph suggest about the paintings of Mondrian?
  - A ☐ They are more carefully put together than they appear.
  - B ☐ They can be interpreted in a number of different ways.
  - C ☐ They challenge our assumptions about shape and colour.
  - D ☐ They are easier to appreciate than many other abstract works.

Complete the summary using the list of words, **A-H**, below.

The discipline of neuroaesthetics aims to bring scientific objectivity to the study of art. Neurological studies of the brain, for example, demonstrate the impact which Impressionist paintings have on our 5 .....

Alex Forsythe of the University of Liverpool believes many artists give their works the precise degree of 6 .....which most appeals to the viewer's brain. She also observes that pleasing works of art often contain certain repeated 7 .....which occur frequently in the natural world.

- A. interpretation    B. complexity    C. emotions

D. movements      E. skill      F. layout

G. concern      H. images

*Do the following statements agree with the views of the writer in Reading Passage (Yes, No, Not given)*

- 8 ..... Forsythe's findings contradicted previous beliefs on the function of 'fractals' in art.  
9 ..... Certain ideas regarding the link between 'mirror neurons' and art appreciation require further verification.  
10 ..... People's taste in paintings depends entirely on the current artistic trends of the period.  
11 ..... Scientists should seek to define the precise rules which govern people's reactions to works of art.  
12 ..... Art appreciation should always involve taking into consideration the cultural context in which an artist worked.  
13 ..... It is easier to find meaning in the field of science than in that of art.

*Choose the correct letter; A, B, C or D.*

**II Provide the words for the following definitions (8):**

accurate	aircraft	altitude	armour	conductivity	constellation	detect
delivery	enhance	short circuit	groove	robotics	junction box	float
branch circuit	hover	insulate	signal	spectacle	recycle	ridge
vehicle	non-ferrous	project	innovative	suspended	core	circuit breaker

1.

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~~any of various devices dropped by a chain, cable, or rope to the bottom of a body of water for preventing or restricting the motion of a vessel or other floating object, typically having broad, hooklike arms that bury themselves in the bottom to provide a firm hold.~~

- 2 to move gently on spectacle the surface of a liquid; drift along  
3 anything presented to the sight or view, especially something of a striking or impressive kind  
4

- any machine supported for flight in the air by buoyancy or by the dynamic action of air on its surfaces, especially powered airplanes, gliders, and helicopters  
5 the height of anything above a given planetary reference plane, especially above sea level on earth  
6 to hang fluttering in the air  
7 the outer, protective wrapping of metal, usually fine, braided steel wires, on a cable  
8 to treat or process (used or waste materials) so as to make suitable for reuse  
9 an electrical quantity or effect, as current, voltage, or electromagnetic waves, that can be varied in such a way as to convey information  
10

- to observe, record, or detect (an operation or condition) with instruments that have no effect upon the operation or condition  
11 a piece of equipment that stops an electrical current if it becomes dangerous

- 12 to raise to a higher degree; intensify; magnify  
 13 free from error or defect; consistent with a standard, rule, or model; precise; exact  
 14 a group or configuration of ideas, feelings, characteristics, objects, etc., that are related in some way  
 15 a connection point where several cables are connected  
 16 a situation where the electrical current takes an easier path than the one intended  
 17 a circuit where the current has a choice of paths

0	1	2	3	4	5	6	7	8	9	10	11	12
anchor												

**III Read the text carefully and fill in the blanks with the appropriate words (12pts) :**

flat inserted socket blades touching rated live wider V-shaped measure outlet grounding

This 10 amp plug has two..... (1) 1.6 mm thick ..... (2) set at 30° to the vertical, forming an upside-down V. Their centres are spaced 13.7 mm apart and both prongs ..... (3) 17.3 mm in length and 6.3 mm in width. The flat earth blade also measures 6.3 by 1.6 mm, but it is 20 mm long. The distance between the centre of the..... (4) pin and the middle of the plug is 10.3 mm. There is an ungrounded version of this plug as well, with only two flat ..... (5) prongs. Both plug versions have insulated ..... (6) and neutral pins, so even if the plug is not fully..... (7) into a socket, ..... (8). the exposed part of the prongs can't give you a shock.

A plug/socket configuration ..... (9) at 15 amps is also available, but the ground pin is ..... (10): 8 mm instead of 6.3 mm. A standard 10 amp plug will fit into a 15 amp outlet, but a 15 amp plug only fits this special 15 amp ..... (11) There is also a 20 amp plug whose prongs are wider still. A lower-amperage plug will always fit into a higher-amperage ..... (12) but not vice versa.

**IV Complete the sentences by writing the verbs in brackets (active and pasive) (10 pts).**

Dear Mrs Patel,

We are delighted to inform you that you (1) \_\_\_\_\_ (select) for a free holiday. According to our information, you (2) (answer) \_\_\_\_\_ a telephone survey last month, as a result of which your name (3) (enter) \_\_\_\_\_ in the holiday draw. Now our computer (4) (choose) \_\_\_\_\_ your name, so you and your family (5) \_\_\_\_\_ (invite) to spend a week in a European destination of your choice. This offer (6) (make) \_\_\_\_\_ on the condition that you attend a special promotions day with other lucky families in your region who (7) \_\_\_\_\_ (offer) a similar deal. You (8) (ask) \_\_\_\_\_ to attend on any Saturday next month at the Royal Hotel, Manchester. If you (9) (interest) \_\_\_\_\_ in

attending and taking up this offer, please (10) (detach) \_\_\_\_\_ the slip below and return it to us as soon as possible.

Yours sincerely,

Jack Peterson