

Name of student

ID card series/no

I. Listening

You will hear a talk twice. Complete the phrases below.

1. The purpose of the talk is to discuss.....

2. The speaker begins by talking about.....

3. In an earthquake, the most dangerous way for the ground to move is.....

4. The photograph shown by the speaker shows the building.....

5. Which method of strengthening a building does the speaker mention?.....

II. Reading and writing

Write a word or phrase from the box in each space.

impact resistance/ tensile strength/ yield point/ brace/ deform/ withstand
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1. We increased the pressure on the metal bar. Then it reached its _____ and it bent.

2. The column is vertical, the beam is horizontal, and the _____ is diagonal.

3. To test the _____ of a material, you have to strike it hard with a hammer.

4. To find out the _____ of a cable, attach one end to a hook, and pull the other end.

5. This glass can _____ heat up to 1650 °C, but above this temperature it will melt.

Choose the correct answers. Write a letter (a-d) in each space.

1. The plastic in these sunglasses cannot be _____ easily if you drop them.
a) break b) broken c) breaking d) broke
2. I want to find out _____ this plastic will bend under pressure.
a) if b) to c) of d) and
3. Bridge piers are made of concrete because this material has good _____ strength.
a) compress b) compression c) discovered d) will discover
4. The purpose of the tensile test is _____ whether the material breaks when it is stretched.
a) discover b) to discover c) discovered d) will discover
5. The new car is very safe, as _____ in Figure 1.
a) showing b) is showing c) show d) shown
6. The fire caused a lot of damage, _____ you can see in this photograph.
a) what b) when c) that d) as
7. Please look at this graph. The graph indicates _____ there were many accidents last year.
a) to b) as c) that d) for
8. The train crashed _____ the heat expanded and bent the railway lines.
a) because b) therefore c) so d) for
9. I'd like to start my talk by _____ you for coming here today.
a) I thank b) thank c) thanks to d) thanking
10. In Japan, it is very important to construct _____ buildings.
a) earthquake-resistant b) earthquake-resisting
c) resist-earthquake d) resisting-earthquake

Complete the report testing a steel wire for a suspension bridge cable. Use the information in the chart.

Aims of test	Will steel wire stretch when pulled? Breaking point?
Test procedure	Fasten one end of wire to hook the rigid steel beam attach 1.2 tonne weight to other end of wire add more weights up to 1.8 tonnes
Test results	No stretch between 1.2 and 1.49 tonnes stretch, no break between 1.5 and 1.69 tonnes break at 1.7 tonnes
Recommendations	Use <1.4 tonne per wire Do not use > 1.4 tonne per wire

Report on test of steel wire for suspension bridge cables.

Aims of test.

1. One purpose of this test was to discover _____
2. The other aim of the test was _____

Procedure

3. First, one end of the wire was _____
4. Next, a 1.2-tonne weight _____
5. Then more weights _____

Results of test

- 6. Between 1.2 and 1.49 tonnes, the wire _____
- 7. Between 1.5 and 1.69, it _____
- 8. When 1.7 tonnes _____, the wire _____

Recommendations

- 9. For weights below 1.4 t, this steel wire _____
- 10. However, above 1.4 t, the wire _____