Engineering Questions by Topic

Ordinary Level

Question 1

Section A

Short Questions

30 Marks

1996 Question 1 Section A

Give **brief** answers to **any six** of the following:

(a) Select a suitable plastic material for each of the following applications:

(i) Safety helmet **(ii)** A transparent cover for an instrument.

(b) List **two** safety precautions to be observed when using oxyacetylene equipment.

(c) Name the ores from which copper and lead are produced.

(d) Explain the essential difference between an ammeter and a voltmeter.

(e) List **two** properties possessed by metals which are suitable for extrusion.

(f) Explain the essential difference between hard and soft soldering.

(g) Explain the function of a diode in an electrical circuit.

(h) Give an example of the following types of motion:

(i) Linear motion; **(ii)** Reciprocating motion.

1997 Question 1 Section A

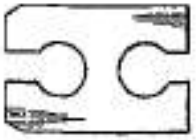
Give **brief** answers to **any six** of the following:

(a) Name **two** safety precautions to be observed when using electrical power tools.

(b) State **two** main reasons for annealing metals.

(c) Name the gauges shown.

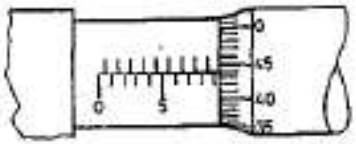
(i) 

(ii) 

(d) Name **two** types of pneumatic compressor.

(e) Explain the function of a fuse in an electrical circuit.

(f) Give the reading of the micrometer screw gauge.



(g) What is meant by the *set* of hacksaw teeth?

(h) What is the function of a variable resistor in a circuit?

1998 Question 1 Section A

Give **brief** answers to **any six** of the following:

(a) Explain the essential difference between thermoplastic and thermosetting plastics.

(b) What is meant by the **fusion process** in the joining of metals.

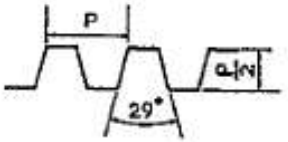
(c) Name **two** properties of cast iron.

(d) State **two** safeguards necessary when using adhesives in the workshop.

(e) Name the gear mechanism shown and give an application for its use.

(f) Explain the difference between a **ferrous** and a **non-ferrous metal**. Give an example of each.

(g) Name the **thread form** and give an application for its use.



(h) Name **two** materials suitable for the following electrical applications:

(i) Insulation (ii) Conduction

1999 Question 1 Section A

Give **brief** answers to **any six** of the following:

(a) Name the electronic component shown.

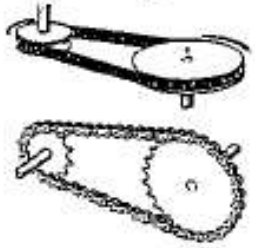
(b) What property makes polystyrene suitable for hot drink containers?

(c) What are the advantages of reaming after drilling?

(d) Describe **two** methods for locking nuts.

(e) Describe **two** safety precautions to be observed when using a "Plastics Dip Coating Tank".

(f) Name the two drive types shown:

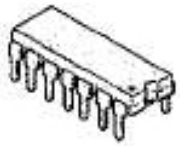


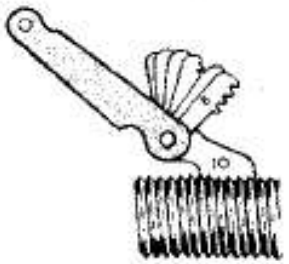
(g) State **two** uses for a centre lathe tailstock.

(h) Name **two** computer input devices.

2000 Question 1 Section A

Give **brief** answers to **any six** of the following:





(a) Name the electronic component shown.

(b) Give an example of work hardening in a metal.

(c) What is an alloy?

(d) Name the gauge opposite and give an application for its use.

(e) What is the essential difference between ferrous and non-ferrous metals?

(f) Name suitable fluxes which may be used when soldering
(i) wires in an electrical circuit; **(ii)** two pieces of brass (hard soldered).

(g) How are voltage and current measured in an electrical circuit?

(h) Name **two** computer output devices.

2001 Question 1 Section A

Give **brief** answers to **any six** of the following:

(a) Name a plastic material suitable for wall insulation.

(b) Explain the abbreviations A.C. and D.C. in relation to an electricity supply source.

(c) Name two non-ferrous metals.

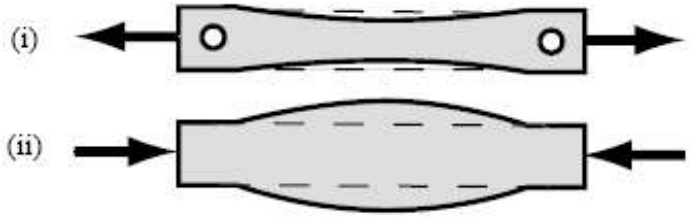
(d) Name the two screw threads shown.

(e) Name two safety precautions to be observed when using an electric arc welder.

(f) What is haematite?

(g) Name the ores from which copper and aluminium are produced.

(h) Identify the two types of force shown.



2002 Question 1 Section A

Give **brief** answers to **any six** of the following:

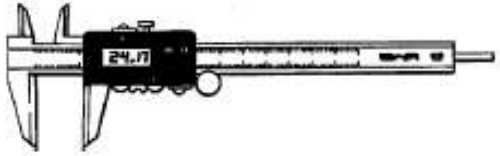
(a) What is meant by capillary action?

(b) Name the electrical component shown.

(c) Give an example where annealing of metals is required.

(d) Name **two** forms of screw thread.

(e) Name the gauge shown and give an application for its use.



(f) Name **two** forms of hard soldering.

(g) Name **two** methods of holding work when machining.

(h) Name **two** safety precautions to be observed when using a pedestal drilling machine.

2003 Question 1 Section A

Give **brief** answers to **any six** of the following:

(a) List **two** safety precautions to be observed when using an electric strip heater to bend plastics.

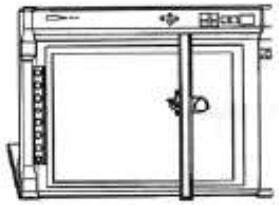
(b) What do the letters LED stand for in electronic circuits?

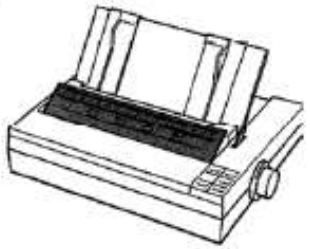
(c) Name **two** types of hard soldering.

(d) Name the metals derived from the following ores:

(a) Galena; (b) Bauxite.

(e) What is the essential difference between a plotter and a printer?





(f) Name the plastics used to produce (i) a Gear Wheel and (ii) a 3-Pin Plug.

(g) Name **two** types of screw thread.

(h) Name **two** electrical measuring instruments.

2004 Question 1 Section A

Give **brief** answers to **any six** of the following:

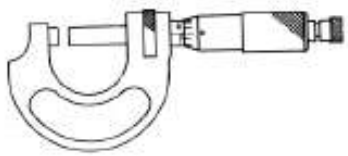
(a) State **two** safety precautions to be observed when working in a welding environment.

(b) Name the electronic component represented by the symbol shown.

(c) Explain the term 'Conductivity' in relation to the properties of metals.

(d) Name the metals that make up the composition of solder.

(e) Name the measuring instrument shown and give an application for its use.



(f) Identify the thread forms suitable for:

(i) a lathe leadscrew;

(ii) a quick-release type of bench vice.

(g) Name the gear mechanism shown and give an application for its use.

(h) Identify **two** applications for robotics in engineering.

2005 Question 1 Section A

Give **brief** answers to **any six** of the following:

(a) List **two** safety precautions to be observed when using a centre lathe.

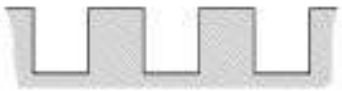
(b) Name the electrical component shown opposite.

(c) Explain the difference between a ferrous and a non-ferrous metal.

(d) Name a plastic material suitable for wall cavity insulation.

(e) Identify the **two** thread forms shown.

(i)



(ii)

(f) Name **two** computer output devices.

(g) Explain the following terms: **(i)** Tapping size hole, **(ii)** Clearance size hole.

(h) What is meant by the term Computer Aided Manufacture (CAM)?

2006 Question 1 Section A

Give **brief** answers to **any six** of the following:

(a) Identify **two** areas of work where it is essential to wear safety goggles.

(b) State the purpose of **any one** of the following in electronic circuits:

(i) Printed circuit board (PCB), **(ii)** Light emitting diode (LED), **(iii)** Switch.

(c) Name the alloy produced from the metals *lead* and *tin*.

(d) State the purpose of an electrical insulator.

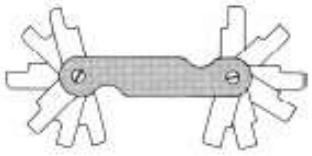
(e) Give a typical application for the vacuum forming process.

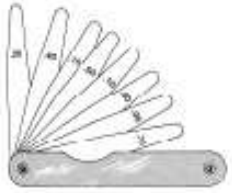
(f) For any **two** of the following thread forms, identify a suitable application:

(i) Square thread, **(ii)** Acme thread, **(iii)** Buttress thread.

(g) Name **two** computer input devices.

(h) Name **one** of the gauges shown.



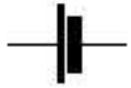


2007 Question 1 Section A

Give **brief** answers to **any six** of the following:

(a) State **two** safety precautions to be observed when using a pillar-drilling machine.

(b) Name the electronic component represented by the symbol shown.



(c) Explain the term self-locking nut.

(d) State the purpose of an *alloy*.

(e) Explain the term *temporary joint*.

(f) Name a thread form suitable for the car jack shown.

(g) Name **one** computer hardware device and state whether it is an input or an output device.

(h) Identify the gear system shown and state a suitable use.

2008 Question 1 Section A

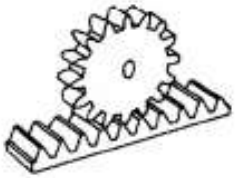
Give **brief** answers to **any six** of the following:

(a) List **two** safety precautions to be observed when heating and forming plastics.

(b) State the purpose of the coloured bands on the fixed resistor shown.

(c) Identify **any two** copper alloys.

(d) Give **one** example of the application of a rack and pinion mechanism.



(e) Explain the term *clearance fit* between a shaft and a hole.

(f) Name **two** types of thread forms.

(g) What is meant by the term Computer Numerical Control (CNC)?

(h) Name the measuring instrument shown and give **one** application of its use.

2009 Question 1 Section A

Give **brief** answers to **any six** of the following:

(a) State **two** safety precautions to be observed when using adhesives to join materials.

(b) Name the electronic component represented by the symbol shown.

(c) State **one** reason for drilling a pilot hole.

(d) Identify the cutting tool shown.

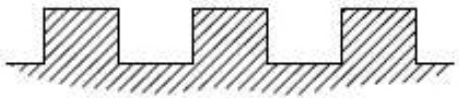
(e) Give **one** example of the use of a plug gauge.

(f) State **two** advantages of using Computer Aided Drawing (CAD).

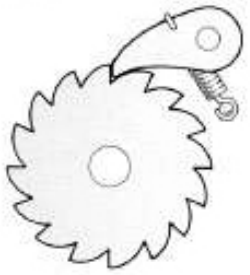
(g) Identify **each** of the thread forms shown:

(i)

(ii)



(h) State **one** application for the ratchet and pawl mechanism shown.



2010 Question 1 Section A

Give **brief** answers to **any six** of the following:

(a) List **two** safety precautions to be observed when using an electric soldering iron.

(b) Suggest a suitable application for the Light Emitting Diode (LED) shown.

(c) State **one** use for a Vee block.

(d) Define the term *ductility* in relation to the properties of metals.

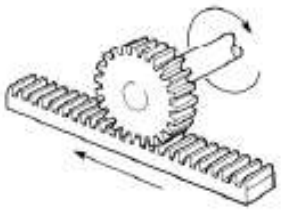
(e) Explain the meaning of an *interference fit* between a shaft and hole.

(f) Name the thread forms suitable for the operation of:

(i) a car jack, **(ii)** a quick-release type of bench vice.

(g) Identify **two** ways computer aided technology can be used to improve the design and manufacturing process.

(h) Name **two** machines that use a *rack and pinion* mechanism.



2011 Question 1 Section A

Give **brief** answers to **any six** of the following:

(a) State **two** reasons why the safety sign shown should be displayed in an Engineering room.

(b) Identify the alloy produced from *copper* and *zinc*.

(c) State **one** reason for using a countersinking drill.

(d) Name **one** screw-thread form and suggest an application.

(e) Suggest a suitable application for the *toggle* switch shown.

(f) What is *galvanised iron*?

(g) Identify **two** advantages of Computer Aided Manufacture (CAM) in product design.

(h) Name the gear mechanism shown and state **one** reason for its use.

2012 Question 1 Section A

Give **brief** answers to **any six** of the following:

(a) List **two** safety precautions to be observed when using a Computer Numerical Control (CNC) lathe.

(b) Name the electronic component represented by the symbol shown and suggest **one** suitable application.

(c) Define the term *brittleness* in relation to the properties of metals.

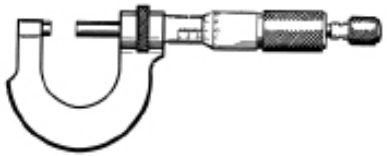
(d) State the purpose of an electrical insulator.

(e) Give **one** typical application for the *injection moulding* process.

(f) Name the mechanism shown and suggest **one** suitable application for it.

(g) Describe **any two** computer output devices.

(h) Identify the measuring instrument shown.



2013 Question 1 Section A

Give **brief** answers to **any six** of the following:

(a) List **two** safety precautions to be observed when using a pillar drilling machine.

(b) Name **two** non-ferrous metals.

(c) Outline **two** advantages of Computer Numerical Control (CNC).

(d) Name the component shown and suggest a suitable application for it.

(e) State **two** reasons why *testing* is important in the design process.

(f) Explain **each** of the following: **(i)** Countersunk (CSK) hole and **(ii)** Tapping size hole.

(g) Identify the thread forms suitable for the operation of: **(i)** a lathe leadscrew and **(ii)** a car jack.

(h) Suggest **one** suitable application for a Printed Circuit Board (PCB).