

# QUESTIONS AND ANSWERS

## PROCESSING METALS

### PART ONE

This mobile revision pdf is based on detailed work found in the 'MATERIALS' and 'EQUIPMENT' sections.

Tap on the green and yellow link buttons below to go to the website.



Tap the blue button to view all work covered by this Revision PDF



# QUESTIONS AND ANSWERS

## PROCESSING METALS

### PART ONE

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#### HOW TO USE THIS REVISION PDF

Read and attempt answering each question, before following the link to a potential answer. Also, consider working in pairs.

#### QUESTIONS ONE TO FIVE

#### QUESTIONS SIX TO TEN

#### QUESTIONS ELEVEN TO SIXTEEN

**TAP / CLICK THE LINK  
BUTTON FOR ALL  
MOBILE APPS**



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# QUESTION 1a

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**Name the top five iron ore producing countries.**

**Tap the image a potential answer**



Tap the blue button for the next slide / page.



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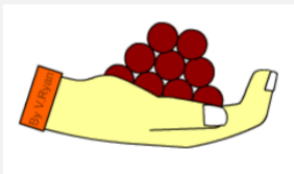


## QUESTION 1b

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**How are iron ore pellets produced?**

**Tap the image** a potential answer



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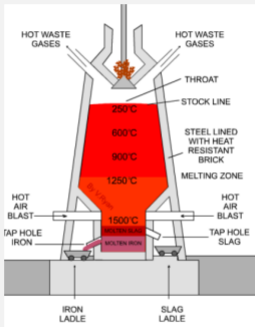


## QUESTION 2a

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# How does a Blast Furnace produce molten iron?

Tap the image a potential answer



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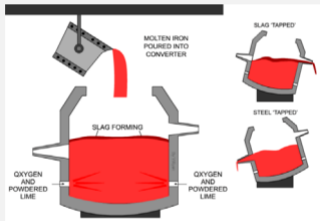


## QUESTION 2b

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# How is steel produced through the Modern Converter Process?

Tap the image a potential answer



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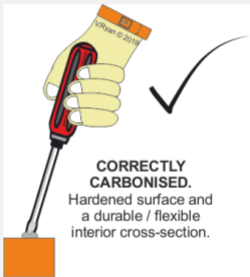


## QUESTION 3a

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**Why is the carbon content of steel important? Include a practical example.**

**Tap the image for a potential answer**



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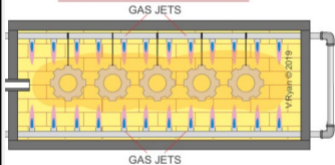
## QUESTION 3b

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**Describe the commercial industrial process called 'Gas Carbonising'.**

**Tap the image for a potential answer**

### GAS CARBONISING FURNACE



Tap the blue button for the next slide / page.



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## QUESTION 4a

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**Write your own definition of an  
'alloy'.**

**Tap the image for a potential answer**



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slide / page.



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## QUESTION 4b

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**What are ferrous and non-ferrous metals?**

**Tap the image for a potential answer**



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## QUESTION 5a

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**Name four steel alloys.**

**Tap the image** for a potential answer



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## QUESTION 5b

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**Name four non-ferrous metals.**

**Tap the image** for a potential answer



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Contents page



## QUESTION 6a

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**Rust can corrode steel and cause it to fail. How does 'galvanising' steel prevent rust?**

**Tap the image** for a potential answer



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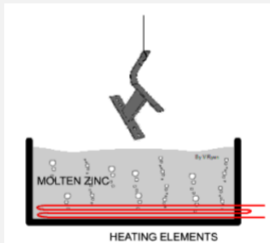


## QUESTION 6b

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### What is 'Hot Dipping' - Galvanising?

Tap the image for a potential answer



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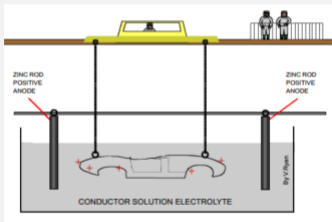


## QUESTION 7a

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Electroplating is more efficient and more cost effective than the 'hot dipping' process.  
**Explain this process.**

**Tap the image** for a potential answer



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## QUESTION 7b

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Mild Steel Round Section Tube is ideal for the manufacture of the bench shown below.

**List four reasons why this is the best material and section, for this product?**

**Tap the image for a potential answer**



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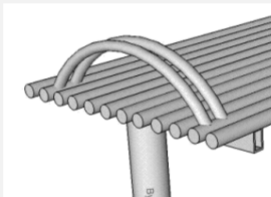


## QUESTION 7c

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Describe two ways the tube for the bench can be cut to length.

Tap the image for a potential answer



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## QUESTION 8a

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Aluminium is one of the most common non-ferrous metals.

**List five practical applications.**

**Tap the image** for a potential answer



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## QUESTION 8b

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**What are the advantages of recycling aluminium, compared to producing new aluminium from bauxite?**

**Tap the image for a potential answer**



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## QUESTION 8c

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**List four properties of aluminium that make it such a versatile 'metal'.**

**Tap the image for a potential answer**



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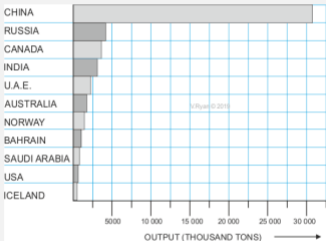


## QUESTION 8d

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**Name the top four aluminium producing countries.**

**Tap the image for a potential answer**



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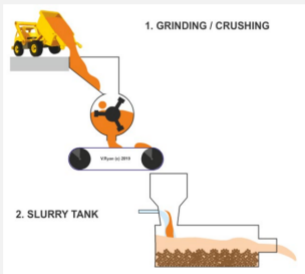


## QUESTION 9

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**Briefly, explain how is Bauxite processed into aluminium?**

**Tap the image for a potential answer**



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## QUESTION 10a

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**What is Titanium? Describe some practical applications of this metal.**

**Tap the image for a potential answer**

PIPING - DESALINATION PLANT



TITANIUM HIP JOINT



TITANIUM JET TURBINE BLADES



TITANIUM DENTAL IMPLANT



TITANIUM GOLF CLUB



TITANIUM COMPONENTS HARD DRIVE



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## QUESTION 10b

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**List some of the properties that make Titanium such a valuable metal.**

**Tap the image for a potential answer**

TITANIUM JET TURBINE BLADES



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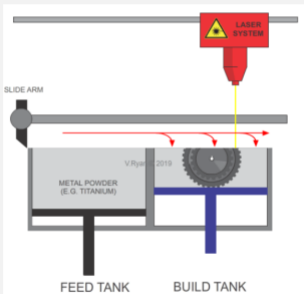


## QUESTION 11a

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**Describe the process called  
'Laser Sintering' of metals.**

**Tap the image for a potential answer**



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slide / page.



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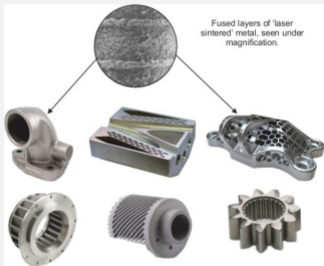


## QUESTION 11b

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**What are the advantages of  
'Laser Sintering'.**

**Tap the image for a potential answer**



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slide / page.



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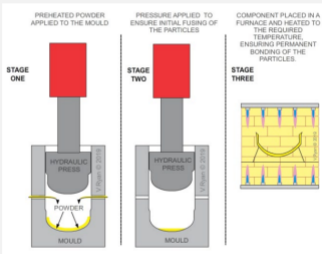


# QUESTION 11c

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## What is 'Press Sintering' of metals?

Tap the image for a potential answer



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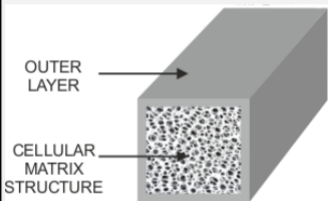


## QUESTION 12a

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### What are metal foams?

Tap the image for a potential answer



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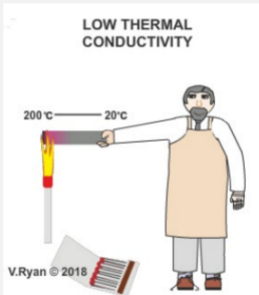


## QUESTION 12b

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**List four important properties of metal foams.**

**Tap the image** for a potential answer



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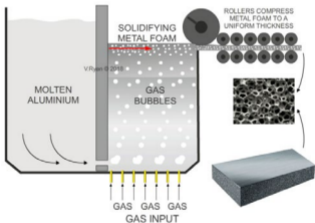


## QUESTION 13

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### How are metal foams manufactured?

Tap the image for a potential answer



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## QUESTION 14

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**Why are metal foams found in the substructure / frame of some cars?**

**Tap the image** for a potential answer

A LOAD BEARING STRUCTURE  
COMPRESSIVE STRENGTH



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## QUESTION 15

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**Describe / explain, the two practical applications of metal foams, seen below?**

**Tap the image for a potential answer**

IMPACT ABSORPTION  
CRUMPLE ZONES



LOW THERMAL CONDUCTIVITY  
HANDLES TO POTS



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