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CANDIDATE NAME			
CLASS		**INDEX NUMBER**	

Chpt 10: Oxidation and Reduction

MOCK PAPER

READ THESE INSTRUCTIONS FIRST

Write your centre number, index number and name on all the work you hand in.
You may use an HB pencil for any diagrams, graphs or rough working.
Write in dark blue or black pen.
Do not use staples, paper clips, glue or correction fluid.

The use of an approved scientific calculator is expected, where appropriate.
You may lose marks if you do not show your working or if you do not use appropriate units.
DO **NOT** WRITE ON ANY BARCODES.

FOR EXAMINERS' USE

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1 What is the oxidation state of oxygen in hydrogen peroxide?

A +1

B +2

C -1

D -2

2 4 students wrote statements about redox reactions.

Anthony: When there is an increase of electrons, the substance gaining electrons is oxidised.
Bryan: The oxidation state of hydrogen in Sodium Hydride is +1.
Chris: For a redox reaction to occur, both oxidation and reductions must occur at the same time.
Daniel: All redox reactions are neutralisation reactions.

Which student is correct?

A Anthony

B Bryan

C Chris

D Daniel

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3 Aqueous potassium iodide and acidified potassium manganate(VII) were added separately to separate samples of hydrogen peroxide.
The observations are summarised in the table.

reagent added to hydrogen peroxide	observations
aqueous potassium iodide	aqueous potassium iodide turns from colourless to brown
acidified potassium manganate (VII)	acidified potassium manganate (VII) turns from purple to colourless

Which set of properties are correct?

	aqueous potassium iodide	aqueous potassium manganate
A	oxidising agent	reducing agent
B	oxidising agent	oxidising agent
C	reducing agent	oxidising agent
D	reducing agent	reducing agent

4 Substance **T** is known to be a compound that has potassium cations.
It is added into H_2O_2 solution.
Upon reaction, it is observed that the colour of **T** changes from purple to colourless.
Which anion is present in substance **T**?

A MnO_4^+

B MnO_4^-

C I^+

D I^-

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5 Which of the following definitions of reduction is correct?

	Oxygen	Hydrogen	Electrons
A	Gain	Lose	Lose
B	Lose	Gain	Gain
C	Gain	Gain	Lose
D	Gain	Lose	Gain

6 Study the below chemical reaction.

$$2NH_3 + 3CuO \rightarrow N_2 + 3Cu + 3H_2O$$

(a) In terms of oxidation state, explain whether this reaction is a redox reaction.

.....

.....

.....

..... [3]

(b) A test for the presence of reducing agents is using an oxidising agent [potassium (VII) manganate].
What is the observation, if an oxidising agent is present?

..... [1]

(c) A test for the presence of oxidising agents is using a reducing agent. [potassium iodide]
What is the observation, if an oxidising agent is present?

..... [1]

[Total: 5]

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7 The table below shows some common oxides. It may help to answer the following questions

Aluminium oxide	*Copper (II) oxide*	*Carbon dioxide*	*Nitrogen monoxide*
Lithium oxide	*Zinc oxide*	*Carbon monoxide*	*Nitrogen dioxide*

Each oxide can be used once, more than once or not at all.
You are to write down **ALL** oxides in the table that apply to each statement. (you can write the chemical formulas)

(a) Amphoteric oxides are oxides that react with both acids and alkalis.
Name the examples of amphoteric oxides.

[1]

.....

(b) Neutral oxides are oxides that do not react with acids or alkalis.
Name the examples of neutral oxides.

[1]

.....

(c) Basic oxides are oxides that only react with acids.
Name the examples of basic oxides.

[1]

.....

(d) Acidic oxides are oxides that only react with alkalis.
Name the examples of acidic oxides.

[1]

.....

(e) Which two oxides are produced by lighting activities?

[1]

.....

[Total: 5]