Fill in these boxes and read what is printed below.

Full name of centre

Town

Forename(s)  

Surname

Date of birth
Day  
Month  
Year  
Scottish candidate number  
Number of seat

80 marks are allocated to this paper.

1 Answer all questions.
2 Read each question carefully before you answer.
3 Written answers may be in ink or pencil.
4 Drawings and sketches must be in pencil.
5 Coloured pencils may be used when sketching.
6 Dimensions are given in millimetres or as stated.
7 Orthographic drawings are in third angle projection.
8 The leaflet for Question 1 has been supplied separately. Please ensure that you have this leaflet.
9 At the end of the examination
   check that your name is on every sheet;
   put the sheets in correct numerical order;
   place this sheet on top of the others;
   join all sheets together by stapling at the top left-hand corner;
   before leaving the examination room, you must give these sheets to the Invigilator (if you do not you may lose all the marks for this paper).

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Total Marks
Design Elements/Principles have been given below.

Please refer to “Discovery Point & RRS Discovery” leaflet.

Indicate in the space provided the following:
• circle whether Design Element or Design Principle;
• describe with direct reference to the leaflet, how the design element or
design principle has been used in the leaflet.

1 Rhythm: Design Element/Design Principle
Description:

2 Colour: Design Element/Design Principle
Description:

3 Shape: Design Element/Design Principle
Description:

4 Unity: Design Element/Design Principle
Description:

(a) Typographical features:
• X-height
• Baseline
• Descender
• Meanline.

(b) Explain with the aid of annotated sketches the difference between a serif and a sans serif typeface.
Describe, with the aid of sketches, the DTP terms listed below.

(a) Term: **Handles**
   Description:

(b) Term: **Widow**
   Description:

(c) Term: **Justification**
   Description:

(d) Term: **Orphan**
   Description:

(a) Shown below, and on the following page, are orthographic views of three components to be made in a 3D modelling package.

Explain, with the aid of sketches, and with reference to the dimensions given how each of these components could be made in 3D CAD.

(i) Component 1

![Component 1 Diagram]

Total (4)
4 (continued)

(ii) Component 2

(iii) Component 3
(b) In computer aided 3D modelling lights are used to enhance a rendered image.

Describe, with sketches, the effects on a 3D CAD model of the following lighting types.

(i) Point

(ii) Spot

There are various types of graphic files for use in CAG work.

Given the two scenarios below, state the correct file type for each and give an explanation why this is so.

(i) A full colour picture to appear on a web page.

File type

Explanation

(ii) A full colour picture to appear in a printed magazine.

File type

Explanation

Total (8)

Total (4)
Describe the DTP terms listed below.

(a) PANTONE
   (i) Meaning

   (ii) Example

   2

(b) SPOT COLOUR
   (i) Meaning

   (ii) Example

   2

Total (4)
The elevation of a cut hollow oblique cone is given.

Draw, in the positions indicated:

(a) the plan;

(b) the development of the sloping surface, seam at O–A.

Show all hidden detail. (11 marks)
The plan, elevation, end elevation and pictorial view of a summer house are shown.

**Draw** the measured perspective view of the hut from the spectator point.

The spectator point (SP), picture plane (PP), ground line (GL) and eye level (EL) are all given.

**Do not show hidden detail.**  

(13 marks)
The plan and elevation of a transition piece are given.

**Draw**, in the position indicated, the surface development cut along seam **AB**.  

(12 marks)
The elevation of a solid right cone is given below.

Draw:

(a) the plan;

(b) the end elevation.

Show all hidden detail. (10 marks)
ACKNOWLEDGEMENTS

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NATIONAL QUALIFICATIONS 2015

THURSDAY, 30 APRIL
1.00 PM – 4.00 PM

GRAPHIC COMMUNICATION
ADVANCED HIGHER

Leaflet for use with Question 1
New for 2013

Our recently installed audio guides which are available in English, French and German, are now also available as an App for iPhone and android devices and can be downloaded from the website - rrsdiscovery.com

Special Exhibitions
FREE admission

My Voyage of Discovery
Victoria Kerr
12th January - 28th March 2013
A series of eclectic art works in pencil, soft pastel, charcoal, ink and watercolour. Subjects include figurative, portraits, horses and old buildings in both urban and pastoral situations.

Light on Land and Sea
Steven Donaldson
30th March - 27th June 2013
Images from around Scotland by this Dundee photographer showing the diversity of Scottish landscapes and weather allowing people to feel part of the scene they are viewing.

Tranquility: A View of the Scottish Highlands
Douglas Hillman
26th June - 1st October 2013
A Dundee photographer takes a pictorial journey through the Scottish Highlands in search of peace and tranquility.

Coastline
St Andrews Photographers
5th October - 21st January 2014
Seascapes images of the Fife and Angus coasts showing the variety and beauty of the scenery, the result of a two-year project by a group of landscape photographers.

Something for everyone
- Parking (car and coach)
- Private Dining on board Discovery
- Conference and Function Facilities
- Gift Shop and Café
- Guided Tours available
- Disabled Access
- All weather
- Open all year

Discovery Point
& RRS Discovery
Polar Explorers Wanted!
(Thermal underwear not required!)

FREE ANNUAL PASS!

Directions:
By Road
Glasgow, Edinburgh and Aberdeen are all within 1 1/2 hours drive. Extensive parking facilities are available adjacent Discovery Point.

By Rail
Discovery Point is directly opposite the main railway station.

Winter Opening:
1st Nov - 31st Mar
Mon - Sat
10am - 5pm
(11am Sun)

Summer Opening:
1st Apr - 31st Oct
Mon - Sat
10am - 4pm
(11am Sun)

Closed:
23rd, 26th Dec & 1st, 2nd Jan

Discovery Point
Discovery Quay
Dundee,
DD1 4XA
Tel: 01382 399560
admin@dundeeheritage.co.uk
rrsdiscovery.com

Dundee Industrial Heritage Ltd.
Registered Charity
No. SCO00328/SC002568

Dundee Heritage Trust
Recognised Body

Discover in the footsteps of
Captain Scott and his heroic team at
DISCOVERY POINT ANTARCTIC MUSEUM, DUNDEE
In the late 19th Century the Antarctic continent was still an uncharted wilderness. Here temperatures plummeted to 50 degrees below zero, winds roared at over 90 mph and icebergs reached lengths of 20 miles and longer. It was into this frozen wilderness that Captain Scott and the intrepid crew of RRS Discovery were to venture in search of scientific knowledge. At Discovery Point you can follow in their footsteps, see how they lived, what they achieved, witness their hardships and their triumphs. It’s a fascinating tale of one of the most heroic voyages of exploration ever undertaken.

“Great God! This is an awful place…”
Captain Robert Falcon Scott.
Antarctica 17 January 1912

Heroes of the ice
The names of Scott and Shackleton ring down through the years, their places in the history of Polar exploration assured by their courage and endeavour. Over 40 other men and officers made up the ship’s company. Each one was a hero in his own right, enduring hardships across the ice, hunting seals and penguins for fresh meat and suffering the hardships of the harsh polar winter. Join them and hear their stories first hand.

Scientific discovery
The main aim of the expedition was to collect valuable scientific data, a tall order given the extreme conditions. It was a task of massive human endeavour carried out in gales and blizzards, often on hands and knees. Despite these adversities the team of scientists made some remarkable findings, from magnetic surveys to collecting the first specimens of Emperor Penguin eggs. Share in the triumphs that made them the scientific champions of their age.

Join the boarding party
In the late 19th Century Dundee was a major whaling centre with a well-earned reputation for building ships to withstand the icy Arctic conditions. This same expertise was used to build RRS Discovery, the first ever vessel specifically designed for scientific exploration in Antarctica. Come aboard and walk in the footsteps of the intrepid crew who braved the cold in the knowledge that their efforts would one day bear fruit. On board you can see the great adventure of the 20th century and Captain Scott’s line of authentic restored cable. Walk through the Mess and explore the life of the ship’s crew as you work your way through two long Antarctic winters.