GCE A LEVEL

A110U10-1

O21-A110U10-1

TUESDAY, 5 OCTOBER 2021 – MORNING

GEOGRAPHY – A level component 1
Changing Landscapes and Changing Places

1 hour 45 minutes

A110U101
01

ADDITIONAL MATERIALS

In addition to this examination paper, you will need **one** WJEC pink 16-page answer booklet, the **Resource Folder** and a calculator.

INSTRUCTIONS TO CANDIDATES

Answer in Section A, **either** questions 1, 2 and **either** 3 **or** 4 (Coastal Landscapes) **or** questions 5, 6 and **either** 7 **or** 8 (Glaciated Landscapes).

Answer questions 9, 10 and, **either** 11 **or** 12 in Section B (Changing Places).

Use black ink or black ball-point pen.

Write your answers in the separate answer booklet provided.

Write your name, centre number and candidate number in the spaces at the top of the answer booklet.

INFORMATION FOR CANDIDATES

The number of marks is given in brackets [ ] at the end of each question or part-question; you are advised to divide your time accordingly.

This paper requires that you make as full use as possible of appropriate examples and reference to data to support your answers. Sketch maps and diagrams should be included where relevant.

Section A: Changing Landscapes

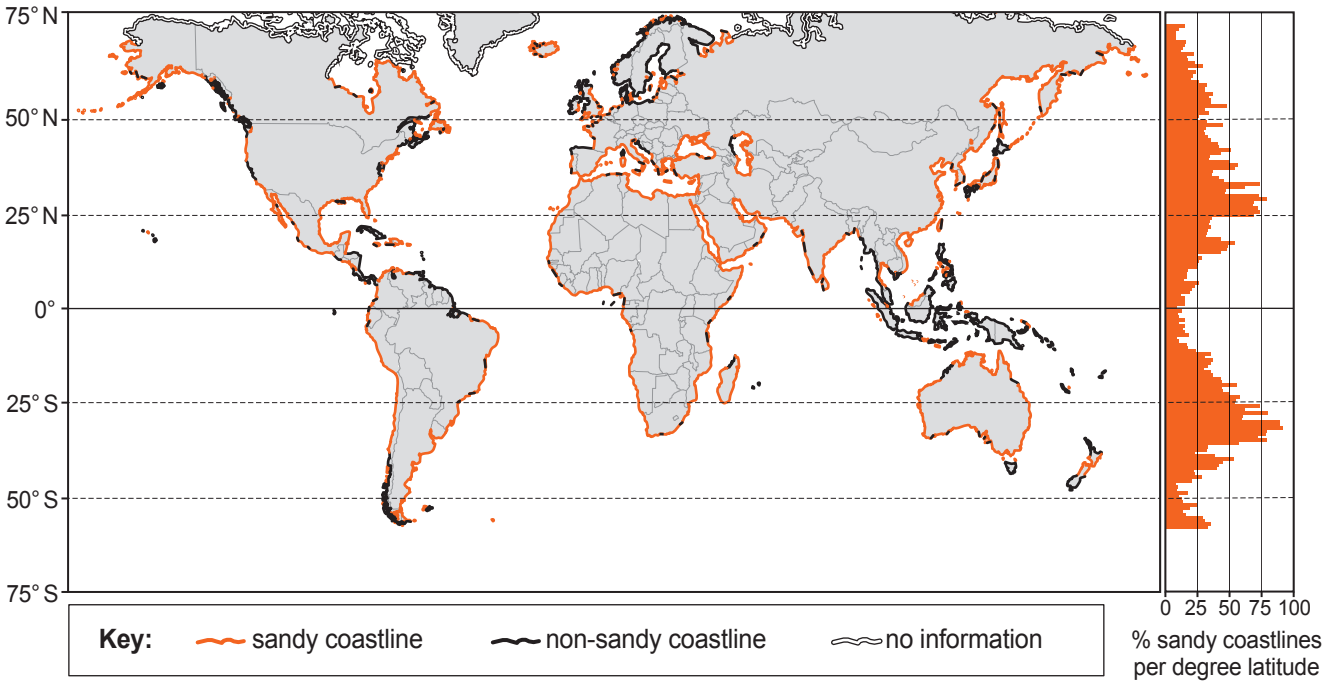
Answer **either** *questions 1* **and** *2 and* **either** *3* **or** *4* **or** *questions 5* **and** *6 and* **either** *7* **or** *8 from your chosen landscape.*

Make the fullest possible use of examples in support of your answers.

Coastal Landscapes

Answer questions 1 **and** *2 and* **either** *3* **or** *4 if this is your chosen landscape.*

Figure 1: Global distribution of sandy coastlines



Source: www.nature.com

1. *(a)* (i) Use **Figure 1** to describe the global pattern of sandy coastlines. [5]

(ii) Suggest **one** reason why northern Europe has a low percentage of sandy coastlines. [2]

(b) Explain how wind action contributes to the formation of sand dune systems. [6]

Figure 2: The relationship between rock hardness and the annual rate of erosion at 12 fieldwork sites on a wave-cut platform in south east England

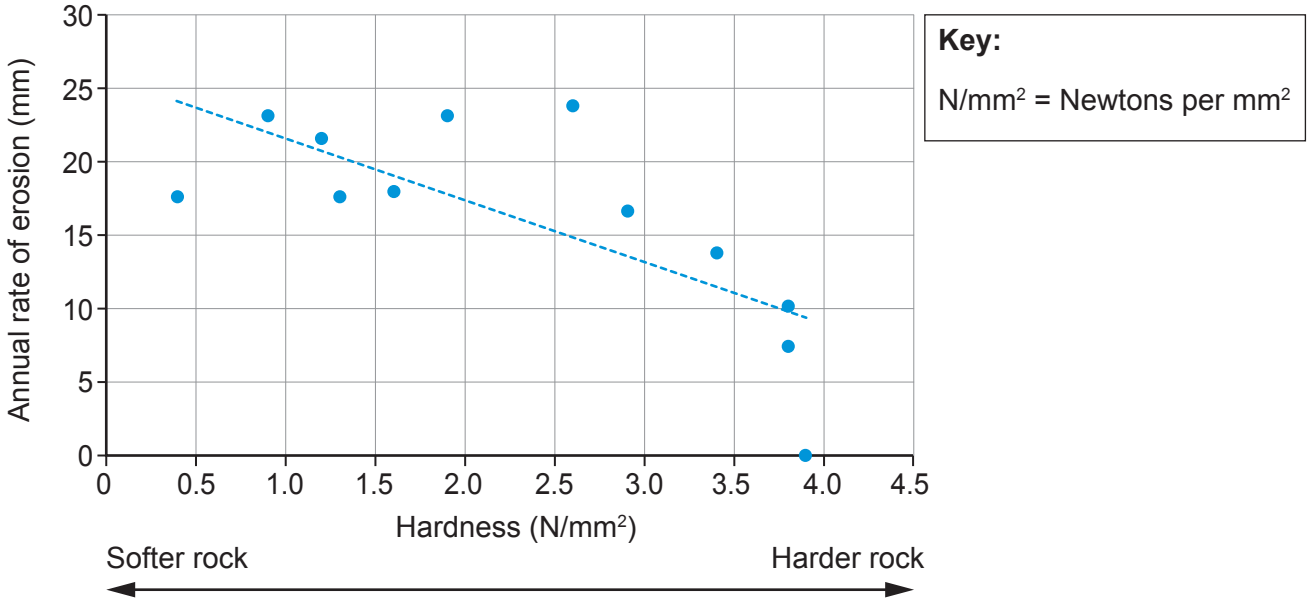


Figure 3: Calculated r_s value and critical values for Spearman's Rank Correlation Coefficient test performed on the data shown in Figure 2

Calculated r_s value = −0.69

Significance (confidence) level		
Number of pairs (n)	**95% (0.05)**	**99% (0.01)**
12	0.49	0.70

2. *(a)* (i) Use **Figures 2 and 3** to analyse the relationship between rock hardness and the annual rate of erosion. [5]

(ii) Suggest how variations in rock hardness shown in **Figure 2** can influence the rate of erosion. [6]

(b) State what is meant by wave refraction. [2]

Either,

3. Examine how a systems approach aids understanding of coastal landscape change. [15]

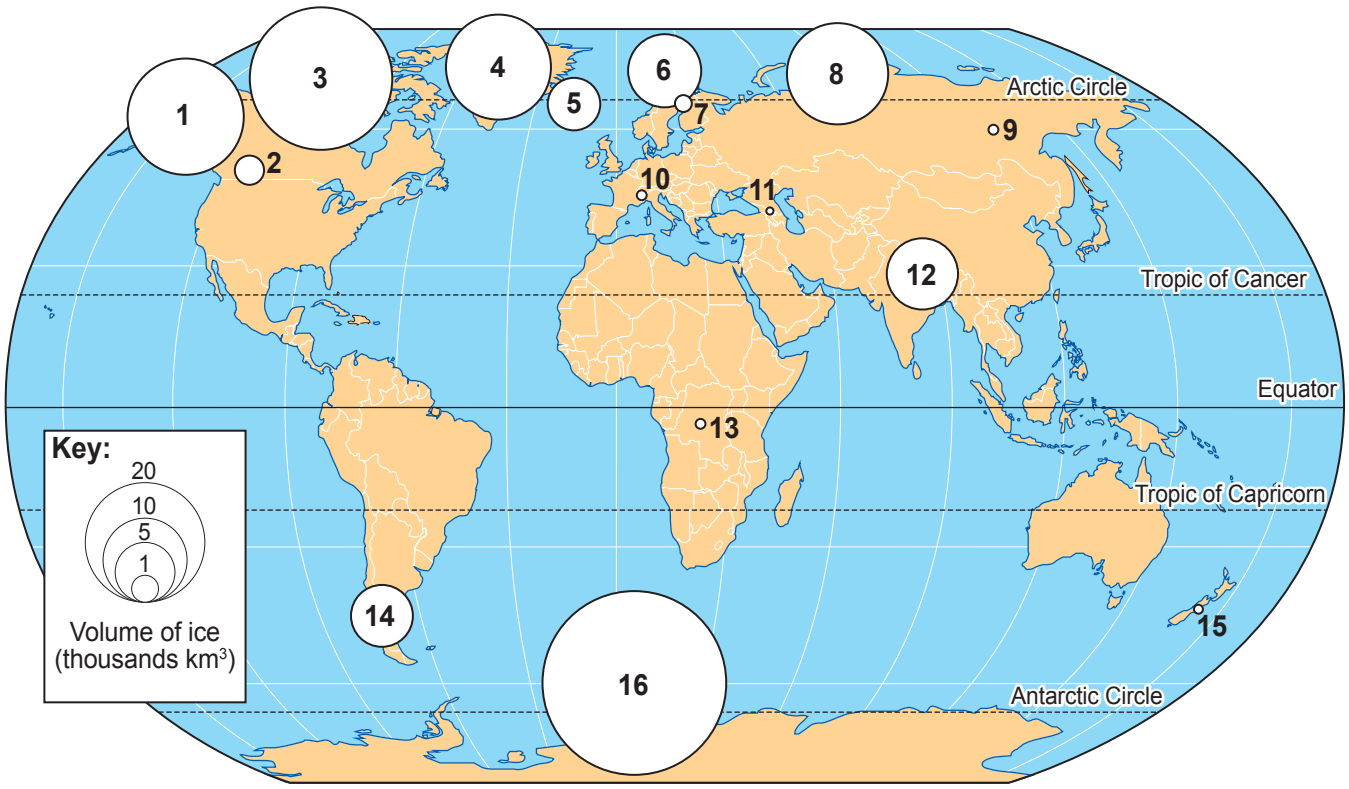
Or,

4. Assess the relative importance of sub-aerial processes in the development of **one or more** landforms of coastal erosion. [15]

Glaciated Landscapes

Answer questions 5 **and** *6 and* **either** *7* **or** *8 if this is your chosen landscape.*

Figure 4: The global distribution of ice masses by volume



Source: doc.rero.ch/record/324672/files/hus_cht.pdf

1	Alaska
2	Western Canada/USA
3	Arctic Canada
4	Greenland
5	Iceland
6	Svalbard
7	Scandinavia
8	Arctic Russia
9	Northern Asia
10	Central Europe
11	Caucasus
12	Central and southern Asia
13	Africa
14	Southern Andes
15	New Zealand
16	Antarctica

5. *(a)* (i) Use **Figure 4** to describe the global pattern of ice masses. [5]

(ii) Suggest **one** reason for the existence of ice masses within the tropics. [2]

(b) Explain how **one** human activity can result in permafrost degradation. [6]

Figure 5: The relationship between altitude and supraglacial debris thickness at 12 fieldwork sites on the Batal glacier, Himalayas

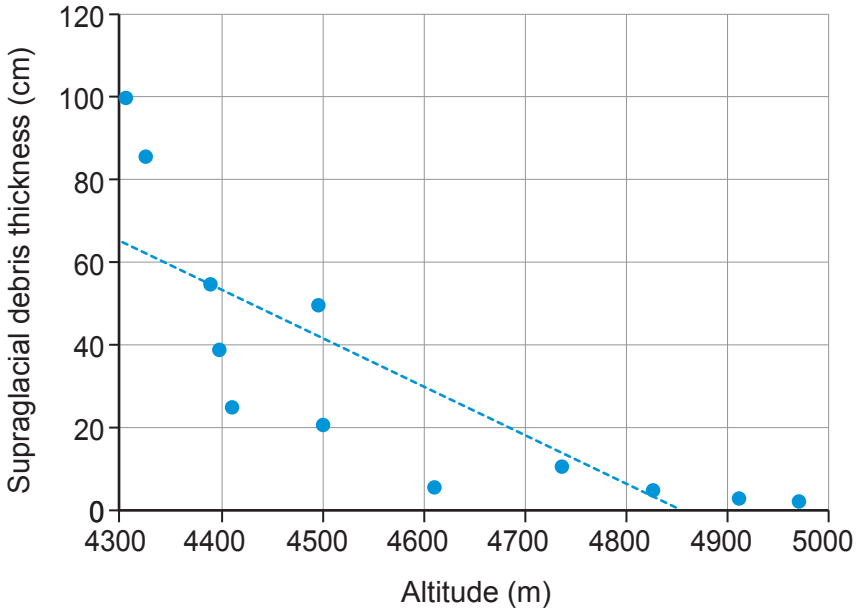


Figure 6: Calculated r_s value and critical values for Spearman's Rank Correlation Coefficient test performed on the data shown in Figure 5

Calculated r_s value = −0.97

Significance (confidence) level		
Number of pairs (n)	**95% (0.05)**	**99% (0.01)**
12	0.49	0.70

6. *(a)* (i) Use **Figures 5 and 6** to analyse the relationship between altitude and supraglacial debris thickness. [5]

(ii) Suggest reasons for variations in the thickness of supraglacial debris shown in **Figure 5**. [6]

(b) Outline **one** characteristic of ablation till. [2]

Either,

7. Examine how a systems approach aids understanding of glacial landscape change. [15]

Or,

8. Assess the relative importance of post-glacial processes in the development of **one or more** glacial landforms. [15]

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Section B: Changing Places

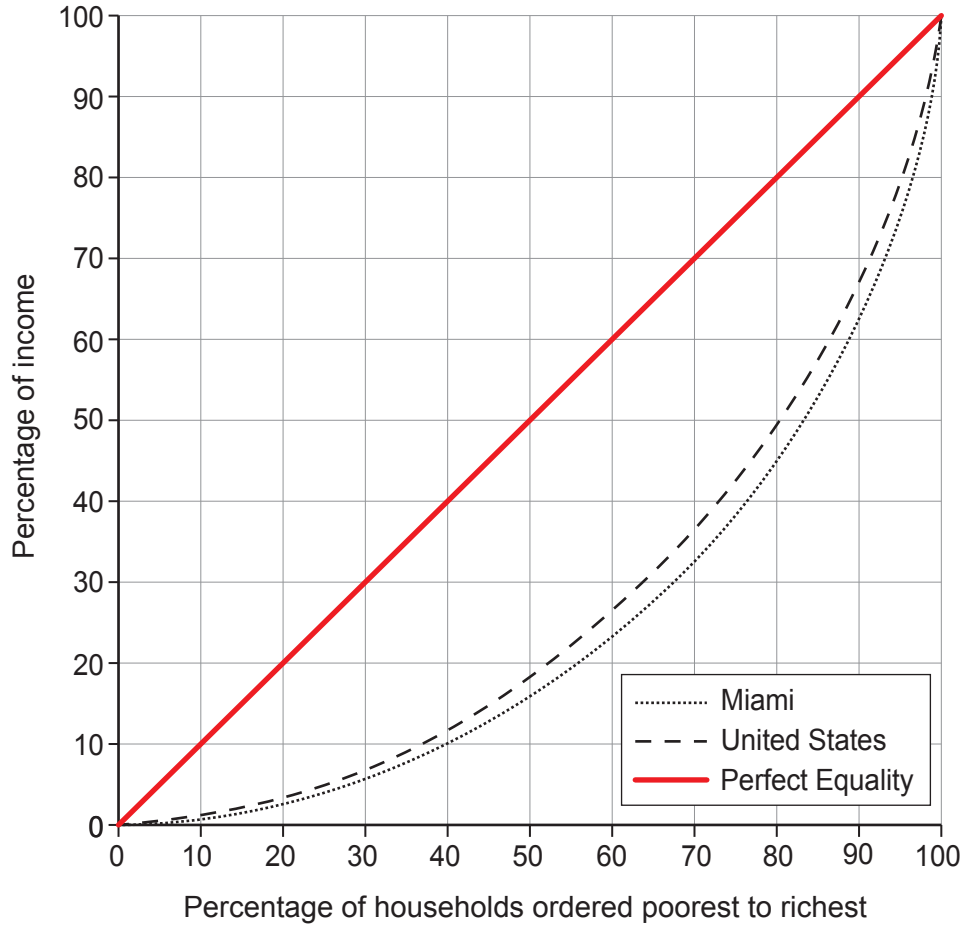
Answer questions 9 **and** *10 and* **either** *11* **or** *12.*

Make the fullest possible use of examples in support of your answers.

9. *(a)* Use **Figure 7** in the **Resource Folder** to describe the distribution and characteristics of tourist and leisure activities. [5]

(b) With reference to **Figure 7** suggest how the regeneration of rural areas through recreation may present challenges for communities. [8]

Figure 8a: Lorenz curve showing income inequality in Miami and the US



Source: www.miamidade.gov/planning

Figure 8b: Gini coefficient showing income inequality in selected US cities, 2017

The Gini coefficient ranges from 0 to 1.
0 represents the highest level of equality with 1 representing the highest level of inequality.

City	Gini coefficient
Miami	0.55
Atlanta	0.58
New Orleans	0.56
Phoenix	0.46

Source: www.citylab.com

10. *(a)* Use **Figures 8a and 8b** to analyse the extent of income inequality in Miami. [5]

(b) Outline how the demographic characteristics of **one** named place have been shaped by local and global factors. [8]

Either,

11. Assess the importance of technology as a driver of economic change in **one or more** places. [15]

Or,

12. Assess the success of the rebranding process in **one or more** urban places. [15]

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Explorer series (1:25 000 scale)

EXPLORER MAP SYMBOLS

Ordnance Survey

ROADS AND PATHS — Not necessarily rights of way

M1 or A6(M) — Motorway
A 35 — Dual carriageway
A 30 — Main road
B 3074 — Secondary road
Narrow road with passing places
Road under construction
Road generally more than 4m wide
Road generally less than 4m wide
Other road, drive or track, fenced and unfenced
Gradient: steeper than 20% (1 in 5); 14% (1 in 7) to 20% (1 in 5)
Ferry — Ferry; Ferry P (passenger only)
Path
Service area
Service area
7 Junction number
T1 Toll road junction
London River Services

RAILWAYS

Standard gauge
Single track
Multiple track
Station, open to passengers
Siding
London Underground
Narrow gauge tramway or light rail system
Station
Road over
Road under
Level crossing
Cutting
Embankment
Tunnel

PUBLIC RIGHTS OF WAY — Not shown on maps of Scotland

Footpath
Bridleway
Byway open to all traffic
Road used as a public path

The representation on this map of any other road, track or path is no evidence of the existence of a right of way.

OTHER PUBLIC ACCESS

Other routes with public access (not normally shown in urban areas)
The exact nature of the rights on these routes and the existence of any restrictions may be checked with the local highway authority. Alignments are based on the best information available.
Recreational route (<> alternative route)
National Trail
Traffic-free cycle route
1 1 National cycle network route number – traffic free; on road
Permissive footpath
Permissive bridleway
Footpaths and bridleways along which landowners have permitted public use but which are not rights of way. The agreement may be withdrawn.

DANGER AREA — Firing and test ranges in the area. Danger! Observe warning notices.
MANAGED ACCESS — Access permitted within managed controls, for example, local byelaws.

BOUNDARIES

National
County; England
Unitary Authority (UA), London Borough (LB), Metropolitan District (Met Dist) or District (Scotland & Wales are solely Unitary Authorities)
Civil Parish (CP); England or Community (C); Wales
National Park boundary

ARCHAEOLOGICAL AND HISTORICAL INFORMATION

Site of antiquity
1066 Site of battle (with date)
VILLA Roman
Castle Non-Roman
Visible earthwork

HEIGHTS AND NATURAL FEATURES

Water
Mud
Sand
Shingle
Survey height;
52· Ground
284· Air

The contour interval on Explorer maps are shown at 5m and/or 10m vertical interval, to provide the most detailed heighting available.

Contours
Vertical face/cliff
Outcrop
5m
10m
Scree
Loose rock
Boulders

Surface heights are to the nearest metre above mean sea level. Where two heights are shown, the first is the height of the natural ground in the location of the triangulation pillar, and the second (in brackets) to a separate point which is the highest natural summit.

VEGETATION — Limits of vegetation are defined by positioning of symbols

Coniferous trees
Non-coniferous trees
Coppice
Orchard
Scrub
Bracken, heath or rough grassland
Marsh, reeds or saltings

ACCESS LAND (England and Wales)

Access information point
Access land
Access land in wooded area
within sand
Coastal margin

Access land portrayed on this map is intended as a guide to land normally available for access on foot, for example access land created under the Countryside and Rights of Way Act 2000, and land managed by National Trust, Forestry Commission, Woodland Trust and Natural Resources Wales. Some restrictions will apply; some land shown as access land may not have open access rights; always refer to local signage.

The depiction of rights of access does not imply or express any warranty as to its accuracy or completeness. Observe local signs and follow the Countryside Code. Visit: gov.uk/government/publications/the-countryside-code

GENERAL FEATURES

Gravel pit
Sand pit
Other pit or quarry
Landfill site or slag/spoil heap
pylon pole Electricity transmission line
Solar farm
Slopes
Place of worship
Current or former place of worship; with tower; with spire, minaret or dome
Triangulation pillar
Mast
Windmill with or without sails
Wind pump
Wind turbine
Building; important building
Glasshouse
Youth hostel
Bunkhouse, camping barn or other hostel
Bus or coach station
Lighthouse; disused lighthouse
Beacon

ABBREVIATIONS — See website for full list

BP	Boundary post	Liby	Library	Pol Sta	Police station
BS	Boundary stone	Mkt	Market	Resr	Reservoir
CH	Clubhouse	Meml	Memorial	Sch	School
F Sta	Fire Station	MP; MS	Milepost; Milestone	TH	Town hall
FB	Footbridge	Mon	Monument	NTL	Normal tidal limit
Ind Est	Industrial Estate	PO	Post office	W; Spr	Well; spring

TOURIST AND LEISURE INFORMATION

Art gallery (notable / important)
Boat hire
Boat trips
Building of historic interest
Cadw
Camp site
Camping and caravan site
Caravan site
Castle or fort
Cathedral or Abbey
Country park
Craft centre
Cycle hire
Cycle trail
English Heritage
Fishing
Forestry Commission visitor centre
Garden or arboretum
Golf course or links
Heritage centre
Historic Scotland
Horse riding
Information centre
Information centre, seasonal
Mountain bike trail
Museum
National Trust
Nature reserve
Other tourist feature
Parking
P&R Park and ride, all year
P&R Park and ride, seasonal
Phone; public, emergency, roadside assistance
Picnic site
Preserved railway
Public house(s)
PC Public toilets
Recreation, leisure or sports centre
Slipway
Theme or pleasure park
Viewpoint
Visitor centre
Walks or trails
Water activities
Water activities (board)
Water activities (paddle)
Water activities (powered)
Water activities (sailing)
Watersports centre (multi-activity)
World Heritage site / area

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For use with question 9

RESOURCE FOLDER

Figure 7: Ordnance Survey map extract (1:25 000), Toridan, Scotland