

312/1

MARKING SCHEME
GEOGRAPHY

Paper 1

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Mar. 2022 – 2¾ hours



Name PREPARED BY SIR WAFULA , OCS Index Number

Candidate's Signature Date

Instructions to candidates

- (a) Write your name and index number in the spaces provided above.
- (b) Sign and write the date of examination in the spaces provided above.
- (c) This paper consists of two sections; **A** and **B**.
- (d) Answer **all** the questions in section **A**.
- (e) Answer **question 6** and any other **two** questions from section **B**.
- (f) Answers **must** be written in the spaces provided at the end of question 10.
- (g) **This paper consists of 20 printed pages.**
- (h) **Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.**
- (i) **Candidates should answer the questions in English.**



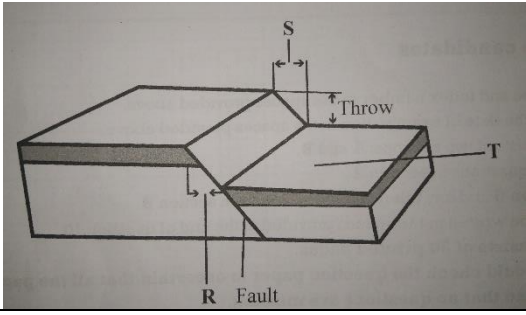
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Section	Questions	Maximum Score	Candidate's Score
A	1-5	25	
B	6	25	
		25	
		25	
Total Score			

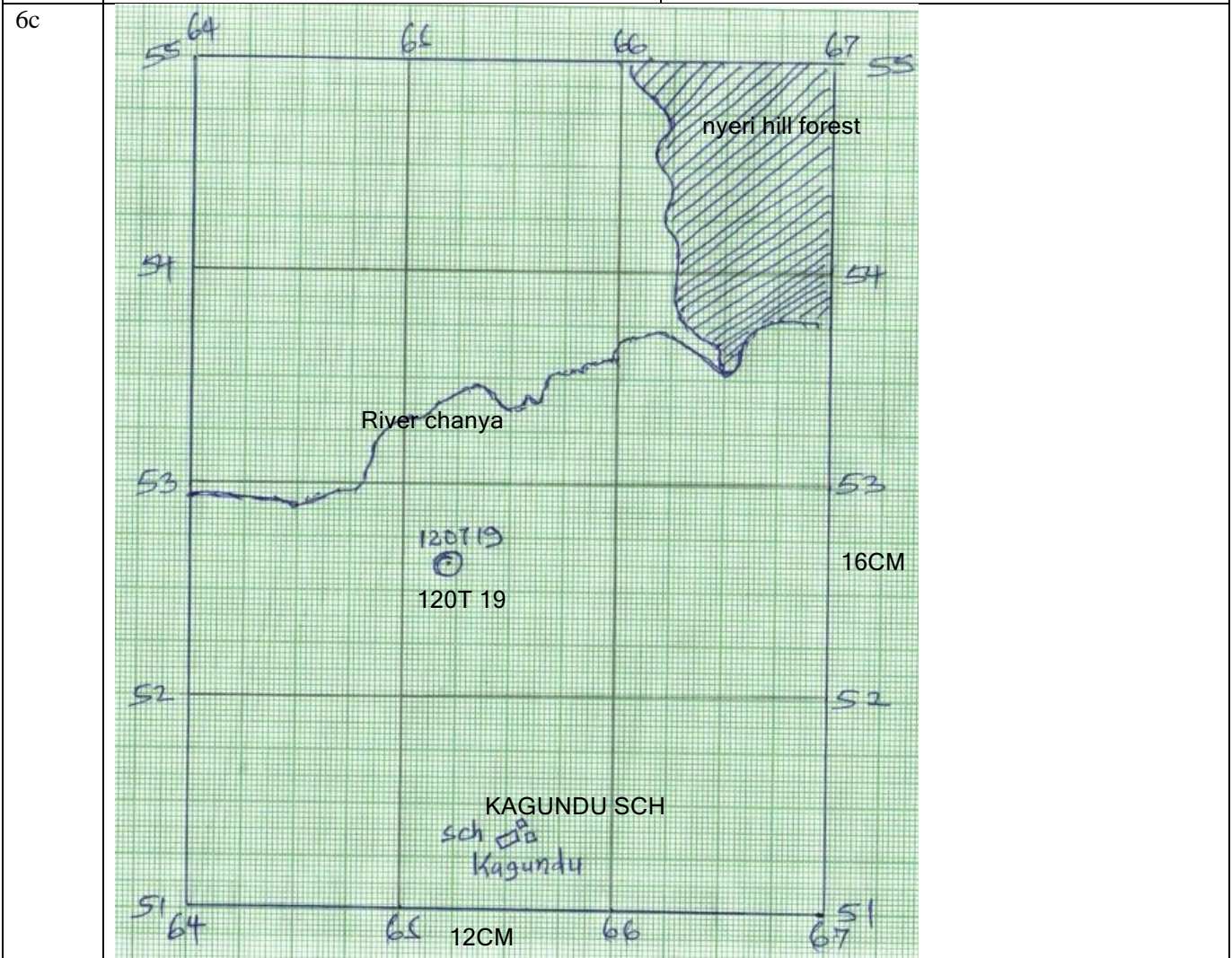
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	QUESTION ITEM	RESPONSES
1a	Apart from dew name three other forms of precipitation (3marks)	<ul style="list-style-type: none"> ✓ Rainfall ✓ Hoarfrost ✓ Hail/hailstones ✓ Snow ✓ Sleet ✓ Mist ✓ Fog ✓ Rime ✓ Thunderstorms
1b	Conditions necessary for the formation of dew (2marks)	<ul style="list-style-type: none"> ✓ The atmosphere should be calm to allow air to remain in contact with the cold ground long enough for it to be cooled below dew point ✓ High temperatures/warm day/ to accelerate evaporation that increases humidity levels in the atmosphere. ✓ Cloudless night which accelerates loss of heat by terrestrial ✓ radiation to cool the ground
2a	The diagram below shows rocks that have undergone the process of faulting use it to answer question 2a	<ul style="list-style-type: none"> ✓ R-Hade ✓ S- heave ✓ T- Downthrow
		
2b	Two processes which rift valley is formed	<ul style="list-style-type: none"> ✓ Crustal arching process ✓ Crustal tension process ✓ Crustal compression process
3a	Name two layers of discontinuity in the internal structure of the earth	<ul style="list-style-type: none"> ✓ Moho/ Mohorovicic discontinuity ✓ Gutenberg discontinuity
3b	Three characteristics of SIMA layer	<ul style="list-style-type: none"> ✓ It contains silicon ✓ It contains magnesium ✓ Its heavier and denser compared to sial ✓ Density 2.8g/cc to 3.0g/cc ✓ Mantle-marginal temperature 400°C ✓ Contains basaltic rocks
4a	What is an iceberg	Mass of ice floating in any waterbody
4b	Erosional features in glaciated low land	<ul style="list-style-type: none"> ✓ Roche montonee ✓ Ice-eroded outwash plains ✓ Depressions ✓ Crag and tail
5a	Types of soil by texture	<ul style="list-style-type: none"> ✓ Silty soils ✓ Sandy soils ✓ Gravel soils ✓ Clay soils

5b	State three ways humus contributes to the quality of soil	<ul style="list-style-type: none"> ✓ It improves soil texture soil tilth and structure ✓ After decomposition essential vital minerals are released to the soil improving fertility ✓ Sufficient amount of humus improves soil aeration and porosity ✓ Most of the humus in the soil is food for microorganism ✓ Some types of humus binds soil particles together reducing effect of erosion ✓ Makes soil to retain moisture for longer periods ✓ Moderates soil temperature due to colour change
6(a)(i)	Identify the two types of scales used in the map. (2 marks)	<ul style="list-style-type: none"> ✓ Ratio scale ✓ Linear scale
6(a)(ii)	Give the six-figure grid reference of the trigonometrical station 120TT27 in the North Western part of the area covered by the map. (2 marks)	✓ 511648
6b	Measure the length of the all-weather road loose surface (E583) from Easting 57 to Easting 66. Give your answer in kilometres. (2 marks)	✓ 10km+0.1km



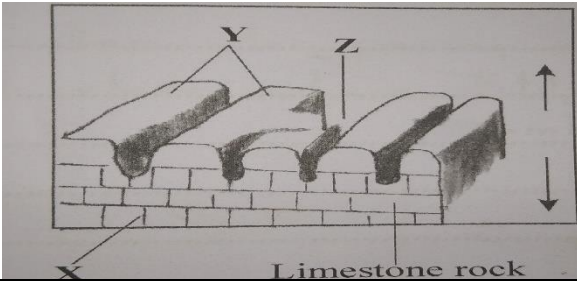
6d	Describe the distribution of natural forest on the area covered by the map 8mks	<p>The central part of the area covered by the map of Nyeri, Nyeri hill forest is dominated by thicket vegetation,</p> <p>In the Aberdare forest south of northings 50, forest bamboo and forest equally dominate the forest, as you move northwards of northing 50 bamboo trees dominates the forest until northing 57, Aberdare national park forest trees dominate. To the northwest scrub vegetation dominates. The area south of northings 62 and north of northings 52 woodland dominates, no vegetation is note east of eastings 62 and south of northings 56 apart form thicket in nyeri hill forest</p>
6e	Citing evidence identify three economic activities carried out in the area covered by the map	<ul style="list-style-type: none"> ✓ saw milling -saw mill6665 ✓ trading- market/shops ✓ tourism- national park gate 6660 ✓ quarrying -quarry7660 ✓ processing -coffee factory 5867 ✓ forestry-Aberdare forest ✓ lumbering -Naivasha, north kabage road through forest ✓ hospitality- treetops game lookout hotel ✓ beef farming-monte-Carlo ranch ✓ crop farming -nderitu farm samaki farm
7a(i)	Three Components of solar system	<ul style="list-style-type: none"> ✓ Sun ✓ Planets ✓ Asteroids ✓ Natural satellites ✓ Comets ✓ Meteor
7a(ii)	Weaknesses of passing star theory	<ul style="list-style-type: none"> ✓ Chances of another star passing near the sun are almost nil ✓ Origin of the sun is not explained ✓ Since the sun and the star are both hot bodies, material from the sun will disperse rather than condense ✓ All the materials would have followed the star because of its greater gravitational force, why others remained behind is not established ✓ The chances of the star setting planets in its orbit will be minimum since the star was moving away ✓ The theory doesn't explain why the planets divided themselves as inner solid planets and outer gas giants up to now ✓ Origin of the star is still a mystery ✓ Formation of other heavenly bodies like moon, asteroids, comets meteors and meteorites are not accounted for in the theory
7b	What is the local time at Kinshasa 15 °E when the local time at Malindi 40 °E, is 12.00 noon? (3 marks)	<p><i>degree difference = 40°E – 15°E = 25°</i></p> <p><i>1° = 4MINS</i></p> <p>Therefore 25=100 min = 1hr 40min</p> <p>Since Kinshasa is behind Malindi we subtract</p> <p>12: 00 1:40 =10:20 am 1020hrs</p>

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7b(ii)	Two Reasons why the earth is spherical <div style="border: 2px solid red; padding: 5px; display: inline-block;">OCS CONFIDENTIAL</div>	<ul style="list-style-type: none"> ✓ Presence of the earth's strong uniform gravitational force that pulls everything equally to its centre. ✓ From volcanic eruptions there is evidence that the interior of the earth is liquid in nature, as the outer crust cooled it was pulled uniformly by gravity into spherical shape ✓ Moderate rotation speed of the earth ensures balance between the internal gravitational force and external centripetal and centrifugal force, during rotation
7b(iii)	State three effects of revolution of the Earth around the Sun.	<ul style="list-style-type: none"> ✓ Causes four seasons, summer winter autumn and spring ✓ Varying length of day and night different times of the year. ✓ Changes position of the overhead sun throughout the year ✓ Alters the sun's light and heat intensity during perihelion and aphelion
7c(i)	Apart from the core, list the other four main layers of the earth's structure(4marks)	<ul style="list-style-type: none"> ✓ Upper mantle ✓ Lower mantle ✓ Sima/oceanic crust ✓ Sial/ continental crust
7c(ii)	State three characteristics of the inner core of the earth (3 marks)	<ul style="list-style-type: none"> ✓ Radius 1370 km ✓ Solid In state ✓ Hot rocks temperature 5500^oc ✓ Iron and nickel are the dominant minerals ✓ Density between 16g/cc-17g/cc
7c(iii)	Explain why the interior of the earth is hot (4 marks) <div style="border: 2px solid red; padding: 5px; display: inline-block;">OCS CONFIDENTIAL</div>	<ul style="list-style-type: none"> ✓ During its formation, most of the heat was retained/trapped as it cooled from out ✓ The weight of overlying materials still exerts pressure to the internal layers generating heat that makes them remain hot ✓ The active radioactive elements within the core continue to undergo radioactivity that produces heat that keeps the interior hot
8	Name two saline lakes that are found in Kenya. (2 marks)	<ul style="list-style-type: none"> ✓ Lake Nakuru ✓ Lake Elmentaita ✓ Lake Bogoria ✓ Lake Magadi
8a(ii)	Give four reasons why some lakes in the rift valley are saline. (4 marks)	<ul style="list-style-type: none"> ✓ Some lakes lie on impermeable or impervious rock-depressions ✓ Some lakes are geographically located in areas that experience high temperatures this causes massive evaporation making them saline ✓ Surface runoff, and streams pour water on the lake contain salts

		<ul style="list-style-type: none"> ✓ Some lakes get salty from volcanic ash intrusions on their beds ✓ Some lakes lie on soluble salty rocks
8b(i)	Apart from cirque lake, list two other lakes that are formed through glaciation process. (2 marks)	<ul style="list-style-type: none"> ✓ Kettle lakes ✓ Ribbon lake ✓ finger lake ✓ rock basin lake
8b(ii)	Describe the formation of a cirque lake. (5 marks)	<ul style="list-style-type: none"> ✓ Snow accumulates in a pre-existing shallow depression on the mountain side. ✓ Snow gets compacted into ice forming a Cirque glacier. ✓ Frost action/ alternating freeze thaw action enlarges the hollow. ✓ Abrasion by ice deepens the hollow. ✓ Plucking process steepens the back wall of the depression. ✓ Eventually, a deep arm-chair like depression known as a corrie is formed ✓ Melt water fills up the corrie to form a lake called corrie lake, cirque lake
c	Explain four positive effects of lakes to human activities. (8 marks)	<ul style="list-style-type: none"> ✓ Fresh water lakes provide fresh water for domestic and industrial use. ✓ Fresh water lakes provide irrigation water thus promoting agriculture. ✓ Man-made lakes are used to generate HEP for domestic and industrial uses. ✓ Some lakes provide a cheap means of transport thus promoting trade. ✓ Some lakes have valuable minerals that are exploited for income or foreign exchange and as industrial raw-materials. ✓ Some lakes contain sand which is ✓ harvested for building and construction industries. ✓ Some lakes are sources of fish which promotes the fishing industry. ✓ Many lakes attract tourists for recreation thus bringing in foreign exchange.
d	Your class is planning to carry out a field study on economic uses of a nearby lake Give two reasons why they would require a route map. (2 marks)	<ul style="list-style-type: none"> ✓ To help identify the direction to follow ✓ Help prepare work schedule ✓ Identify location of features for study ✓ Help estimate distance to be covered ✓ To help estimate the time the study will take
e	List two methods of data collection they are likely to use.	<ul style="list-style-type: none"> ✓ Direct observation/ participatory observation ✓ Conducting and recording oral Interview ✓ Administering questionnaire/open and closed ended questionnaires ✓ Taking Photograph /video recording /recording film ✓ Reading secondary sources ✓ content analysis ✓ Watching videos ✓ Listening to audio tapes

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		<ul style="list-style-type: none"> ✓ Taking measurements ✓ Reading instruments/thermometers ✓ Sketching the field ✓ Counting items ✓ Carrying out experiments ✓ Collecting relevant samples ✓ Drawing maps of the area ✓ Taking notes ✓ Audio recording
9	What is karst scenery	<ul style="list-style-type: none"> ✓ It's a limestone dominated region where surface and underground features are formed by carbonation
9a(ii)	Give four conditions necessary for the development of Karst scenery. (4 marks)	<ul style="list-style-type: none"> ✓ Presence of thick limestone or dolomite rich in calcium carbonate to react with rain water for carbonation and solution process to take place ✓ Rocks should be hard and well jointed to allow water to percolate along the joints to form underground features ✓ A hot humid climate with moderate rainfall to facilitate chemical weathering and carbonation processes ✓ Water table should be deep far below the limestone rock surface to allow formation of underground features
	<p>The diagram below shows surface features in a limestone area. Use it to answer question Name the features marked X, Y and Z.3 marks)</p> 	<ul style="list-style-type: none"> ✓ Y- Clint ✓ Z- Grike ✓ X Jointed limestone rocks
	Stalagmite (5 marks)	<ul style="list-style-type: none"> ✓ Rain water percolates into limestone rocks ✓ and reacts with calcium carbonate to form ✓ a solution of calcium hydrogen carbonate. ✓ The solution trickles slowly through joints in the rocks to the roof of the cave or cavern. ✓ The solution drips from the roof to the floor of the cave of the cavern. ✓ Water evaporates and carbon (IV) oxide is given off forming calcium carbonate which precipitates on the floor as crystals. ✓ The crystals build upwards forming finger-like projections facing upwards called stalagmites.
	Polje. (5 marks)	<ul style="list-style-type: none"> ✓ Rain water absorbs carbon (IV) oxide to form a weak carbonic acid solution.

		<ul style="list-style-type: none"> ✓ The solution percolates through joints and faults in the limestone rocks. ✓ Solution process enlarge and deepen the joints and faults to form large depressions on the surface. ✓ The depressions are widened to form adjacent uvalas. ✓ The uvalas join to form a very large elliptical shaped depression with a flat floor called polje.
	Explain three reasons why there are few settlements on the Karst scenery. (3 marks)	<ul style="list-style-type: none"> ✓ The landscape is rocky therefore unsuitable for most human activities ✓ They have rugged surfaces which are unsuitable for human settlement ✓ They have thin soils therefore unsuitable for agriculture ✓ Limited vegetation cover ✓ Inadequate water supply since most of it flows underground ✓ Caves and caverns below make the ground unstable for construction of roads and houses
10 a(i)	Three major deserts in Africa	<ul style="list-style-type: none"> ✓ Sahara Desert ✓ Kalahari Desert ✓ Namib desert
10a(ii)	Give two reasons why wind action is distinct in hot deserts.	<ul style="list-style-type: none"> ✓ Most hot desert surfaces are dry therefore particles are carried easily ✓ Most hot deserts have scanty vegetation or no vegetation allowing winds to gain top speed for action ✓ High temperatures massively alter the atmospheric pressure creating powerful storms with ability to act on hardest and heaviest rocks
10b	Describe the processes through which wind transports its load.	<ul style="list-style-type: none"> ✓ Slightly heavier pebbles, stones are dragged rolled or pushed along desert surfaces by surface creep ✓ Some medium particles are lifted by wind eddy currents in little hops and jumps by the process of saltation ✓ Fine and light particles are lifted off the ground and held within air currents and transported for long distances through suspension
10c (i)	Describe how the following desert features are formed. Oasis (4 marks)	<ul style="list-style-type: none"> ✓ Stormy winds blow away massive amount of sand on the desert surface by deflation ✓ A depression is created ✓ As wind continues to blow in the depression eddy currents are generated which continues to grind as it scoops out more sand forming deflation hollow ✓ This process continues to deepen the deflation hollow until the water table is exposed making water to ooze out ✓ This deflation hollow depression containing water in desert Is called an oasis

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(ii)	Wadi (4 marks)	<ul style="list-style-type: none"> ✓ Flash floods from heavy torrential rainfall occurs in a sandy desert causing massive water surface run off ✓ By abrasion surface water runoff creates or cuts rills on the desert surface ✓ Continued abrasion deepens and widens the rills by vertical erosion ✓ The rills merge to form deep valleys called gullies ✓ Further erosion merges several gullies to form a flat-floored steep sided rocky valley called a wadi
10d	Explain the significance of desert features to human activities 6mks	<ul style="list-style-type: none"> ✓ Loess deposits form fertile soils for arable farming ✓ Desert features Like rock pedestal yarding form beautiful sceneries which attract tourists ✓ Bare and extensive surfaces are used for testing military weapons

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