



MERIDIAN JUNIOR COLLEGE
PRELIMINARY EXAMINATION
Higher 1

H1 Geography

8812/01

Paper 1

16 Sept 2015

3 Hours

Additional Materials: Answer Paper
1 Insert
World outline map

READ THESE INSTRUCTIONS FIRST

Write your name, civics group and index number on all the work you hand in.

Write in dark blue or black pen on both sides of the paper.

You may use a soft pencil for any diagrams, graphs or rough working.

Do not use staples, paper clips, highlighters, glue or correction fluid.

Section A

Answer **four** questions.

Section B

Answer **one** question.

Section C

Answer **one** question.

Diagrams and sketch maps should be drawn wherever they serve to illustrate an answer.

The world outline map may be annotated and handed in with relevant answers.

You are reminded of the need for good English and clear presentation in your answers.

Start each question on a fresh sheet of paper.

At the end of the examination, fasten this **cover sheet** and all your work securely together in **chronological order**.

The number of marks is given in the brackets [] at the end of each question or part question.

This document consists of 5 printed pages and 1 blank page.

Name: _____

Class: _____

Index number: _____

Qn no. (Section A)	Marks	Qn no. (Section B)	Marks	Qn no. (Section C)	Marks
1		5 Either / Or*		7 Either / Or*	
2		6 Either / Or*		8 Either / Or*	
3 Either / Or*					
4 Either / Or*					
Total					

*Please **circle** the question number attempted and **delete** Either / Or accordingly

Section A

Answer **four** questions from this section.

Lithospheric Processes, Hazards and Management

1. Photograph 1 shows a road in the **limestone** region of Warren County, Kentucky, that collapsed on February 25, 2002.

- (a) Briefly describe the characteristics of limestone and how it influences the chemical weathering of limestone. [3]

Composition: >80% CaCO₃ causing carbonation solution by acidified rainwater
 Structure: Non-clastic sedimentary rock, crystalline and non-porous but pervious due to rectangular jointing → allows ingress of rainwater → sub-surface carbonation solution

Issues:

- A surprising large number did not specify the chem weathering process wrt limestone → carbonation
- Usually info on structure missing or missing links between characteristics and influence on chem weathering (described in isolation without explaining how characteristics INFLUENCE chem weathering)
- DO NOT write "attack the joint" → weathering along the joints

- (b) Provide a geomorphological account for the collapse of the road. [6]
 geomorphological account → physical or chemical processes resulting in topographic feature, basically the question is just asking you to explain the collapse of the road

Formation of caves: carbonation solution along horizontal master joints result in creation of underground caves (diagram)

Collapse of roof: Over time, as the cave enlarges, the overlying soil and rock cannot be supported anymore and they collapse into the cavern below → collapse of road

Issues:

- Lack of detailed explanation of how cave forms beneath the road surface
- Reference to this as a mass movement, this is not a mass movement
- Poor phrasing: "formed because of a doline" → the feature itself is a collapsed doline

- (c) Briefly explain the formation of limestone pavements. [3]

Glacial activity to expose limestone by stripping away the vegetation and soil
 Carbonation solution along the rectangular jointing of the exposed limestone.

The widened vertical joints become depressions known as grikes and the remnant blocks that remain between the joints are known as clints

- Glacial retreat → expose underlying limestone
- Vertical joints present → carbonation or frost shattering along vertical joints → widening them
- Overtime → vertical joints widen to form grikes, flat top forms clints

Draw diagram

Issues:

- Missing reference to glacial retreat
- Immediate reference to vertical joints as grikes resulting in poor phrasing “grikes widen and deepen” → the grikes formed due to widening and deepening of vertical joints to form grikes, the grikes are eventual outcomes and limestone feature of the limestone pavement
- Poor use of terms “cracks” → be specific, vertical joints
- Poor use of terms ‘erosion’ vs ‘weathering’ → carbonation (and all weathering processes learnt) are WEATHERING processes, they occur in situ. Erosion involves movement of materials, these are NOT equivalent to weathering processes

The Globalisation of Economic Activity

2 Fig. 1 shows the distribution of Ferrero Group’s operation in Nutella production.

(a) Using Fig. 1, describe the distribution of Ferrero Group’s production network for Nutella. [4]

- In general, there is a Global distribution of all functions on the whole with no continent left out.
- However the distribution is uneven with a disproportionately high concentration of activity in W. Europe.
 - HQ in DC (Alba, Italy)
 - 1 sales office, 3 factories, 1 main supplier
- Most main international supplier in LDC, NIEs (4/5) Greatest sales in Asia (3/8) & Americas (3/8), generally lack proximity to site of production/factories
- Most production in DC (7/9), concentrated in Europe (5/9), only 3 in LDC (south America and Russia)

(b) Outline the reasons for the distribution described in (a). [8]

Use GSMTC and explain accordingly where appropriate

Hydrologic Processes, Hazards and Management

3 **Either** Fig. 2 shows the drainage basin of the Rhone River in Europe and the river regime at selected locations along the river.

(a) Describe the possible differences in channel morphology between Scion and Beaucaire.

Deeper wider and higher velocity. Lower slope. [4]

(b) Give 1 reason why the shapes of the 2 hydrographs at Lyons (Saone and Rhone) are different.

Snowmelt [2]

(c) Describe the steps you would take to obtain the values of discharge for the River Rhone at Scion.

Ref fieldwork package. [6]

Urban Issues and Challenges

3 **Or** Fig. 3 shows a model of urban development based on some cities in Asia.

(a) Describe the location and extent of the areas experiencing urban sprawl in Fig. 3. [3]

Make sure you address both location and extent

Location

- Along main roads extending from city leading to the 3 secondary cities
- Linear pattern along main road

Extent

- Limited in extent on either side of the road
- Wider around road junctions, on one of which has a small city/town has developed
- Multi-directional (mainly N and NW)

Issues:

- Urban sprawl does not mean it must grow radially from city, in this data it clearly showed it grew along main roads and this should be pointed out in the answer
- Location and extent not clearly referred to

(b) Using Fig. 3 and your own knowledge, explain the impact of urban sprawl shown in Fig. 3. [4]

Environmental impacts: loss of areas of natural beauty, pollution

Social impacts: segregation , urban deprivation
Economic impacts: inner city decline

- (c) Describe how you would delimit the CBD region of the major city through landuse mapping. [5]
Ref fieldwork package.

Lithospheric and Hydrologic Processes, Hazards and Management

- 4 **Either** Fig. 4 shows some factors affecting processes operating on a slope.
- (a) Account for the overland flow likely to be experienced at locations A and B. [6]
- (b) Using the factors shown in Fig 4, explain the influence of climate on slope stability. [8]

The Globalisation of Economic Activity and Urban Issues and Challenges

- 4 **Or** Fig. 5A shows a map of Singapore's CBD in 2008 and the proposed Marina Bay extension area of the CBD.
Fig. 5B shows features of Marina Bay.
Fig. 5C shows a view of Marina Bay.
- (a) With reference of Fig. 5A, describe **two** characteristics of the extension area and provide a reason for the location selected for the extension of the CBD. [4]

What is the purpose of the extension area? (CBD) → function of the CBD? → What are the characteristics of CBD?
Why are these characteristics important to the function of the CBD?

Describe the 2 characteristics (cardinal direction, spatial extent, intensity of landuse)

- The extension area is adjacent and east of the existing CBD.
- The extension area is 0.47 Sqkm larger than the current CBD (0.82 vs 1.29 Sqkm)
- The extension are is more intensely used than the current CBD – 5.71sqkm in Raffles Place vs 6.67sqkm in office area comparable to Raffles Place.

Explain why it was selected in relation to the characteristics

The location was selected as the extension area because of its close proximity to the current CBD. This is important as it allows for the seamless expansion of the CBD. This is important as the CBD serves as the key economic centre of the city and the expansion of the CBD adjacent to the current one allows for continued agglomeration of the commercial, administrative and retail function of a CBD. This allows for the extension area to continue to tap on the

traded and untraded interdependencies which the current CBD currently enjoy. Moreover, with the extension area next to the current CBD, it continues to enjoy high transport accessibility. Therefore, the expansion area was selected to be adjacent to the current CBD.

Issues:

- Absolute lack of data for description of characteristics
- Poor interpretation of question intent → many make reference to the tourist sites available or re-imaging, however this has nothing to do with CBD's extension and location
- Many make reference to tourists being near CBD area hence resulting in extension → tourists are not the same as expats working in Singapore
- Inaccurate causal relationship of extension area chosen due to high accessibility, high human traffic and hence high profitability → the area itself is already highly accessible
- Poor GSMTC application → several explained that it is near the original CBD hence decreasing transport and production cost → CBD is not an industrial site, be careful when applying GSMTC!

- (b)** Explain **two** ways in which good governance in Singapore has contributed to the growth of the CBD. [4]

Stable govt → inward FDI → increased vibrancy of CBD
 Rejuvenation policies → inward FDI as well as domestic investment → increased vibrancy of CBD

- (c)** Using Figs 5A, 5B and 5C, suggest why the Marina Bay area may enhance Singapore's global city status. [6]

- Extension of CBD with highly intense landuse
- Iconic skyline, distinct lighting with multiple functions supporting flows of retail, cultural products
- Presence of recreational, cultural spaces within MB area amidst its economic function

Section B

Answer **one** question from this section.

Lithospheric Processes, Hazards and Management

5 Either

- (a) Provide an account of the evidence for the plate tectonics theory. [9]

Explain evidences for

- a) Crustal creation
- b) Crustal destruction
- c) Crustal conservation

Mark scheme:

2m for PTT

2m each for well explained point

Max 7m if not all categories are explained

- (b) To what extent can the variety of granite landforms be attributed to the characteristics of the rock? [16]

L3: Answer should include both arguments that show the role of composition and structure of granite in creating different landforms and be countered by the role of climate.

5 Or

- (a) Explain how cockpit karst and tower landscapes may have formed. [9]

Refer to notes.

(Explain the formation of cockpit karsts first, as they need to be formed before tower karsts can be formed)

- (b) With reference to specific examples, critically evaluate the effectiveness of strategies that have been employed to reduce the impacts of earthquakes. [16]

L3: Strategies are thoroughly evaluated with examples from both DCs and LDCs showing both examples of successful measures as well as shortcomings in each of the measures.

Hydrologic Processes, Hazards and Management

6 Either

- (a) With the aid of a diagram or diagrams, explain the influence of relief and climate on overland flow in a drainage basin. [9]

HOF vs SOF diagram from notes.

Show how the nature of rainfall affects infiltration rates to generate HOF/SOF

Show how slope angle affects the rate of infiltration and hence form HOF/SOF.

- (b)** Critically evaluate the view that the variety of channel patterns is attributed to conditions outside the channel rather than those within the channel. [16]

L3: Answer considers the role of channel morphology as well as conditions in the drainage basin that are essential to the formation of braided and meandering streams.

6 Or

- (a)** Explain how Hjulstrom's curve may be used to explain the differences in river processes between upstream and downstream locations along a river. [9]

- (b)** With reference to one or more examples, assess the success of strategies adopted to manage the impacts of flood hazards in both DCs and LDCs. [16]

L3: Strategies are thoroughly evaluated with examples from both DCs and LDCs showing both examples of successful measures as well as shortcomings in each of the measures.

Section C

Answer **one** question from this section.

The Globalisation of Economic Activity

7 Either

- (a) Explain the advantages for manufacturing and related services of locating in a purpose-built industrial area such as Science Parks and Export Processing Zones (EPZs). [9]

Here, 'industrial area' can be interpreted widely to include, science parks, industrial estates, export processing zones (EPZs) and other purpose-built zones. The advantages may be many and are diverse, including: [M1]

- financial incentives; relocation packages, subsidies, reduced taxation, preferential rates, etc.
- assured supply of utilities; electricity, water, gas
- specialist disposal facilities for wastes
- good road access, near nodal points and highways
- on-site security
- promotion and prestige
- interaction with other businesses/functional linkages
- agglomeration economies
- for existing businesses, overcoming problems of current location e.g. traffic congestion, poor environmental quality, lack of space.

Mark on overall quality, not seeking comprehensive answers, bearing in mind the three bands of marks and levels of response: 0–4, 5–7 and 8–10. For a response without exemplar support, max. 6.

Fig. 1 showed an artist's impression of an industrial park to be built and led into a question on the advantages for industry of locating in such a purpose-built area. Candidates were free to answer on any kind of purpose-built zones, not just what looked like a hi-tech or R&D-type park in the figure. Effective responses developed a number of potential advantages; such as financial incentives, buildings ready to occupy, assured supply of water and electricity and accessibility; and combined these with some exemplar support, although this was not necessary for every advantage given.

- (b) Explain the term NIDL and discuss the view that NIDL has led to development in the global economy. [16]

Syllables document

TWE have all benefitted from NIDL?

Yes, but impact varies at different scales – global, regional, national variation in development

Winners and losers

A definition of NIDL was needed and the 'international' and 'labour' aspects required emphasis. There was a detectable tendency to write about global shift as the reasons for

both are similar. So definitions were vague and needed the following. 'International' means across the globe, across international boundaries. Mostly that was indicated. 'Labour' – this needed to stress the separation of low skilled workers in LDCs who work on the assembly lines doing menial routine tasks which require little or no training, compared with high technically skilled, highly educated workers in DCs responsible for the research and development and administration/executive roles in running the companies found at their HQ (main office). Many failed to encapsulate these specific points within their definition. In this case, the definition required some development and could not be completed in one sentence. The reasons were done well by many candidates, although when transport and communication improvements are mentioned, candidates often fail to develop the point by describing these improvements in terms of large container ships which provide efficient loading and unloading of large numbers of smaller portable items, speed of jet air transport for people, and high-value low-weight perishable goods and electronic communication which needs examples such as optic cables, Internet access, text messaging and Skype. The addition of illustrations adds much value to an answer.[M2]

7 Or

- (a) Differentiate between the terms tertiary, quaternary and quinary, as they are applied to the service sector of the economy and briefly account for their recent growth. [9]

Different according to the nature of the services provided.

Tertiary industry

These are services provided to people. It is also known as **consumer services**. Such services include retailing, tourism related services ~~and banking~~.

- Rising affluence → high spending power and desire for products → rising need for consumer service to cater to people → example

Quaternary industry

These are services provided to firms and businesses. These are also known as **producer services**. This industry is extremely knowledge-based and profit driven. Examples include banking, advertising, insurance, logistics and legal / financial consultancy services.

- (leading from increasing affluence) Improvement in technology and knowledge → greater specialization in production of goods and services → rise of quaternary industry

Quinary industry (Jones 1995)

These are domestic or quasi-domestic services such as care for families, volunteer work and craft based activity. Most of such services are generally government led and non-profit oriented.

- Aging population especially in DCs → increasing number of elderly requiring a range of care services such as healthcare due to range of illnesses related to old-age, care services to better cater to needs of elderly → example
- Changing demands of the economy → need for constant learning and upgrading of skills to equip people → Education both in DCs

& LDCs → example

Mark scheme:

1m per definition (to differentiate between terms)

2m per well-explained account of recent growth with example (Max 1m without example)

- (b) The state plays an important role in the location of economic development. To what extent do you agree with this statement? [16]

2012 H2 either

Examine the role of the state in the **location** of economic development.

Candidates did well for this question. Most were able select, direct and apply their learned material to satisfy the demands of the question set, rather than simply reproducing recall knowledge. They were also able to integrate diverse examples in some detail and respond at different scales, e.g. ASEAN, national and regional/local, for example, Jurong Island, Marina Bay Financial Hub, and the biomedical hub of One North, A, Biopolis, etc. The command word 'Examine' was interpreted effectively by many.*

Urban Issues and Challenges

8 Either

- (a) With the use of examples, **account** for **housing problems** in cities of DCs and LDCs. [9]

- People's inability to afford the high rents of other dwellings (poverty, unemployment, underemployment, survival, etc.)
- demand for dwellings exceeds supply (natural increase, in-migration, small-scale house building programmes, refugees)
- these areas may offer much as communities, e.g. in terms of support and proximity to workplaces, as "slums of hope"
- property markets may operate to exclude those who are poorer, lower status, immigrants, etc.
- these areas are part of city identity and urban history, many are long established and so persist

Mark scheme:

2m per well explained point

Reserve 2m for examples

- (b) To what extent are transport problems in cities difficult to overcome? [16]

L3: Answer uses empirical evidence from case studies to illustrate the

difficulties associated with transport management as well as the increasing options of technology that increasingly can be brought to bear.

8 Or

- (a) Briefly explain how Bid Rent Theory can be used in understanding the landuse patterns of cities. [9]

Refer to notes.

- (b) Discuss the nature and extent of social problems found in cities in both Developed Countries (DCs) and Less Developed Countries (LDCs). [16]

L3: Answer uses at least 3 criteria to highlight similarities and differences in the characteristics and magnitude of social problems (segregation, polarisation) facing DCs and LDCs. Quality of answer dependent on rigour of examples provided to substantiate points made.

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