Helping you Achieve Highest Grades in IB

IB Geography SL

First Assessment 2019

Geographic themes—seven options
SL—two options; HL— three options
Freshwater, Oceans and coastal margins, Extreme environments, Geophysical hazards, Leisure, tourism and sport, Food and health, Urban environments

Question Paper

Short Answer Questions

Theme: A- Freshwater

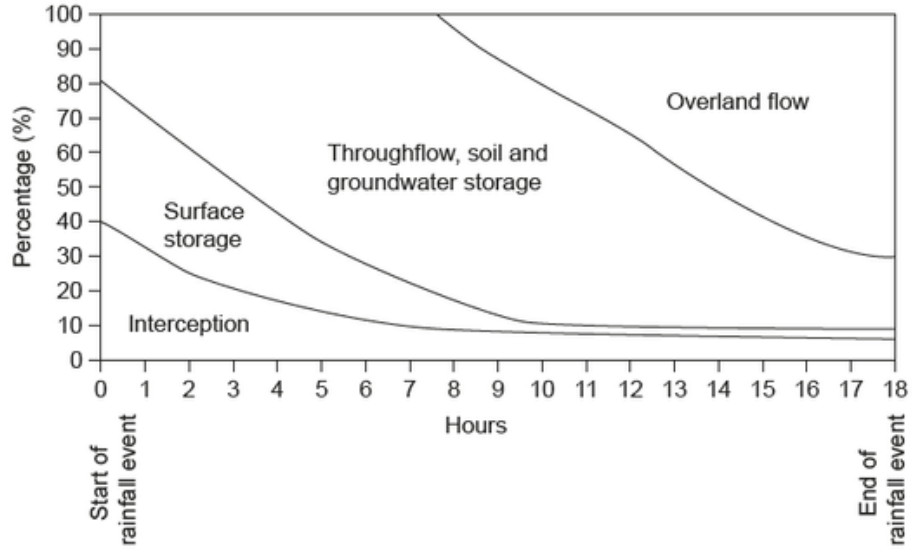
Marks: 180

Total Marks: / 180

Questions

19N.1.BP.1

The following diagram shows the rainfall stores and flows within a drainage basin during a rainfall event.



[Source: International Baccalaureate Organization, 2019]

a.i.Estimate the percentage of rainfall shown as surface storage at the start of the rainfall event. [1]

a.ii.

Estimate the number of hours during which overland flow is present in the drainage basin. [1]

b.

Outline one reason why interception decreases over time during the rainfall event shown in the diagram. [2]

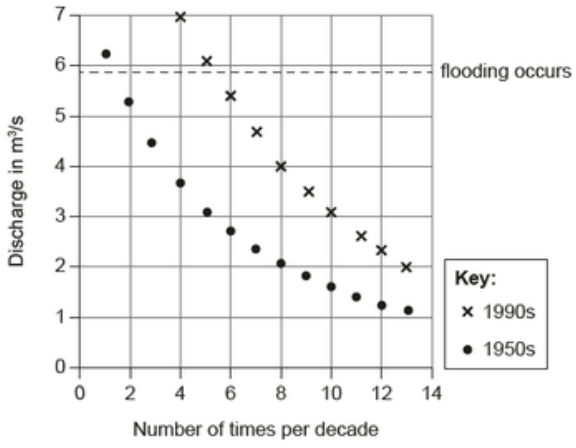
c.

Explain three possible ways in which urban development might change how rainwater moves through a drainage basin such as this. [6]

19M.1.BP.1

Option A — Freshwater

The diagram shows the changing frequency of discharge* in a small drainage basin during two different time periods.



Questions

[Source: © International Baccalaureate Organization 2019]

* frequency of discharge: how often a river reaches or exceeds a particular discharge level
a. Estimate the highest discharge of the river during the 1950s. [1]
b. state the number of times that river discharge reached 4 m_3/s (cubic metres per second) during the 1990s. [1]
c.
Outline two possible land use changes that could account for the increase in river discharge over time shown in the diagram. [4]
d.i.
Explain how different channel modifications in a small drainage basin such as this can increase flood risk. [2]
d.ii.
Explain how different channel modifications in a small drainage basin such as this can assist with flood mitigation. [2]

19N.1.BP.2

a. Evaluate the strategies used to manage the growing pressures on one named major wetland. [10]
b.
Examine the relative severity of the different effects of agriculture on freshwater quality. [10]

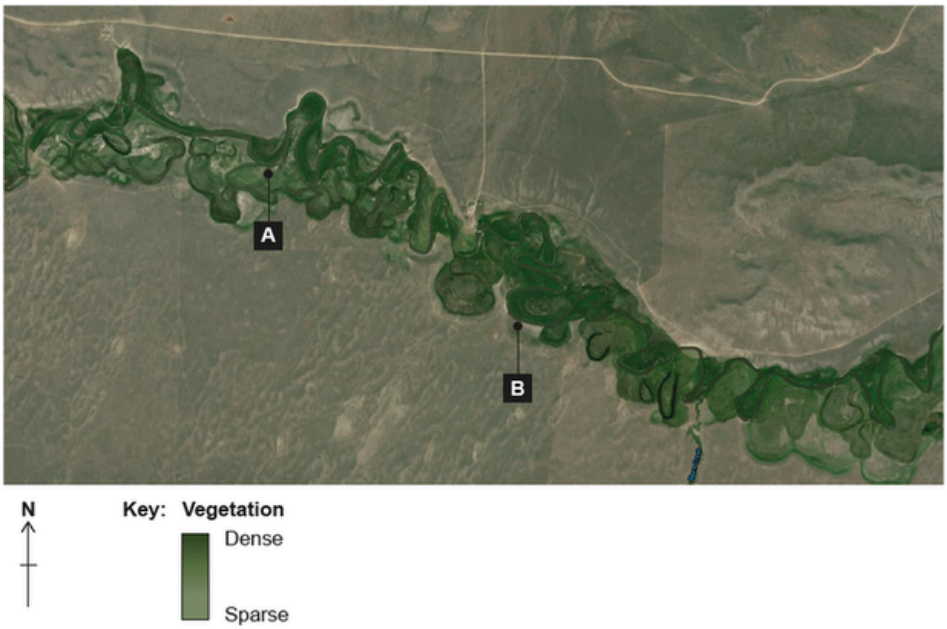
19M.1.BP.2

a. Examine the costs and benefits, for different stakeholders, of one recent integrated drainage basin management (IDBM) plan. [10]
b. Examine the relative importance of erosion and deposition in the formation of floodplains and meanders. [10]

21N.1.BP.1

The satellite image shows part of the Red Rock River in Montana, USA.

Questions



[Source: U.S. Geological Survey, n.d. Site map for Montana. [online] Available at: https://waterdata.usgs.gov/mt/nwis/nwismap/?site_no=06011500&agency_cd=USGS [Accessed 1 October 2020]. Source adapted.]

a.i.State the direction from point A to point B.

[1]

a.ii.

Estimate the percentage of the satellite image that is covered by dense vegetation.

[1]

b.

Outline the relationship between river discharge and hydraulic radius.

[2]

c.

Suggest two landform changes that could be caused by river processes in an environment such as this.

[6]

21N.1.BP.2

a. Examine the management challenges that internationally shared water resources can create.

[10]

.b

Examine why some communities and environments may benefit more than others from the building of large dams.

[10]

Questions

21M.1.BP.1

The table shows the location and height, in metres, of the world's tallest waterfalls.

	Name	Location	Height of waterfall (m)
1	Kerepakupai Merú	Venezuela	979
2	Tugela Falls	South Africa	948
3	Tres Hermanas	Peru	914
4	Olo'upena Falls	USA	900
5	Yumbilla	Peru	896
6	Vinnufallet	Norway	865
7	Skorga	Norway	865
8	Pu'uka'oka Falls	USA	840
9	Mattenbachfälle	Switzerland	840
10	James Bruce Falls	Canada	840
11	Browne Falls	New Zealand	836
12	Kjerrskredfossen	Norway	830
13	Los Chorros de Cura	Venezuela	821
14	Waihilau Falls	USA	792
15	Colonial Creek Falls	USA	783
16	Mongefossen	Norway	773
17	Gocta	Peru	771
18	Balåifossen	Norway	765
19	Johannesburg Falls	USA	751
20	Terror Falls	New Zealand	750

[Source: Adapted from https://www.worldwaterfalldatabase.com/tallest-waterfalls/total-height. Information presented on the World Waterfall Database is constantly being re-evaluated and while we strive to keep it as accurate as possible, there are entries in our Tallest list(s) which need to be more closely scrutinized and as such the heights we currently have presented may or may not be entirely accurate.]

a.i.Identify which country has the most waterfalls between 780m and 860m in height. [1]

a.ii.

State the mode for height from the table.[1]

b.

Outline the main features of one landform, other than a waterfall, created by river erosion. [2]

c.

Explain two reasons why rates of erosion could vary at different waterfalls, such as those shown in the table. [6]

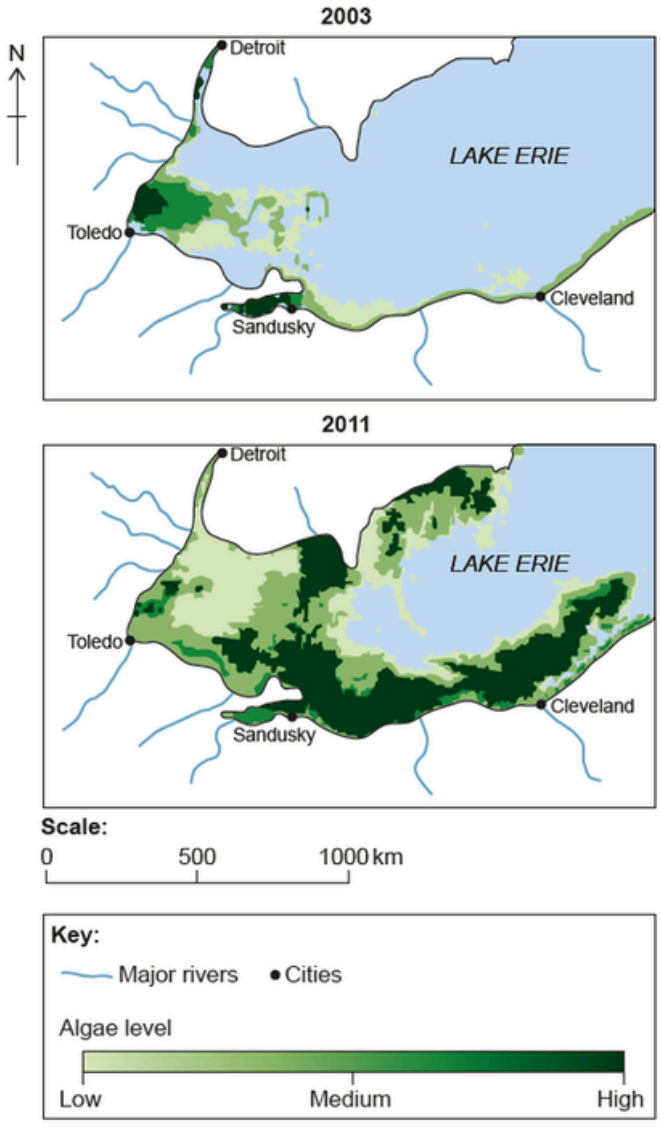
Questions

21M.1.BP.2

a. Examine how human and physical factors can contribute to a low risk of river flooding.
[10]
b.
Examine why it can be difficult to achieve stakeholder agreement over how best to manage one or more water resources.
[10]

20N.1.BP.1

The maps show the growth of algae in a freshwater lake where eutrophication is occurring. Algae growth is caused by high levels of nutrients.



Questions

[Source: NOAA.]

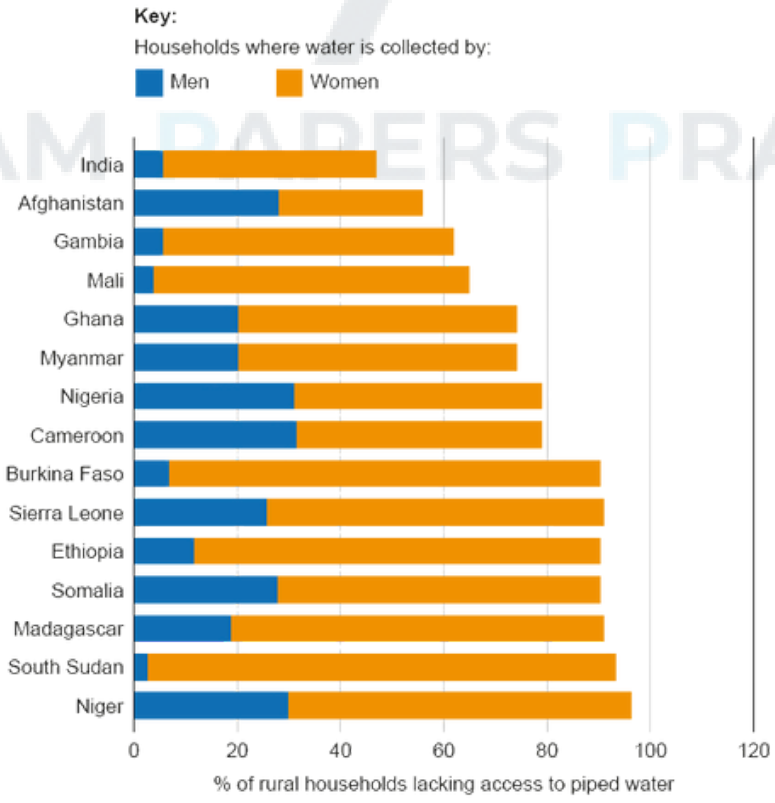
a. Identify two changes between 2003 and 2011 along the southern shore of the lake between Sandusky and Cleveland.
[2]
b.
Outline one environmental problem caused by eutrophication.
[2]
c.
Explain one human reason and one physical reason why some areas of a freshwater lake such as this experience high levels of eutrophication.
[6]

20N.1.BP.2

a. Examine the role of local communities in the management of water resources.
[10]
b.
Examine the ways in which different physical factors can affect the characteristics of hydrographs. [10]

22M.1.BP.1

The graph shows who has responsibility for collecting water from outside the home in countries where a high percentage of rural households lack access to piped water.



Questions

[Source: Adapted from Safely managed drinking water: thematic report on drinking water 2017, World Health Organization &
United Nations Children's Fund (UNICEF), p. 31, 2017.
https://apps.who.int/iris/handle/10665/325897. Accessed
6 May 2020.]

a.i. State the number of countries where more than 60 % of rural households rely on water from outside the home.

[1]

a.ii.

Identify the country where men and women have equal responsibility for collecting water from outside the home.

[1]

b.

Outline one environmental impact of increased human pressure on aquifers.

[2]

c.

Explain two ways in which water can be managed to provide a more sustainable future for local communities in countries such as these.

[6]

22M.1.BP.2

a. Examine why geographers use a systems approach in the study of drainage basins.

[10]

b.

Examine how conflicts between different stakeholders in the management of wetlands might be resolved.

[10]