

G12 ECZ GEOGRAPHY P1 2016 SPEC SOLUTIONS

Geography Paper 1, 2016 Specimen (2218/1)

Section A: Mapwork (1-12) + B: Physical Geog (13-32) + C: World Human Geog (33-50)

Preamble for Geography

The Examinations Council of Zambia has made adjustments to the assessment of Geography at Grade 12 level so as to be in line with the revised Geography Senior Secondary School Syllabus of 2013 developed by Curriculum Development Centre (CDC) of the Ministry of General Education. The structure in this specimen paper will take effect in 2018.

Purpose

The purpose of the Geography Assessment is to measure the candidates' understanding of physical, social, cultural, economic aspects and research skills and their impact on spatial patterns. It will also assess their appreciation of spatial challenges and possible solutions. It will also be used for certification and placement.

Assessment Objectives

The Grade 12 Geography Examination will test candidates' performance against the following:

Knowledge with Understanding

1. Recognise planets that make up the solar system.
2. Describe the effects of rotation and revolution of the earth.
3. Describe the processes on the surface of the earth and the resulting landforms.
4. Identify elements of weather.
5. Classify vegetation.
6. Appreciate the social and economic importance of natural resources.

Applying Geographical Concepts and Skills

1. Locate places using longitudes and latitudes.
2. Calculate time, angle of elevation, gradient, bearing and relative humidity, and measure distance.
3. Interpret charts, diagrams and statistical data
4. Undertake a fieldwork project and write a report.
5. Apply map-reading skills.
6. Appreciate geomorphic movements and resulting landforms.
7. Appreciate the importance of the solar system.

Information handling and problem solving

1. Conserve various natural resources.
2. Design an environmental impact assessment of economic activities.

Test Design

The Grade 12 Geography examination will consist of three papers.

Paper Name	Paper Code	Duration	Marks Allocated	Weighting
Geography Paper 1	2218/1	1 hour 30 minutes	50	40%
Geography Paper 2	2218/2	2 hours	48	48%
Geography Paper 3	2218/3	School based	12	12
Total			110	100%

EXAMINATIONS COUNCIL OF ZAMBIA

Examination for School Certificate Ordinary Level

Geography

2218/1

Paper 1

1:50 000 Survey Map is enclosed with this question paper

Additional Information:

Multiple Choice answer sheet

Soft pencil (type B or HB is recommended)

Time: 1 hour 30 minutes

Instructions to Candidates

- 1 Do not open this question paper until you are told to do so.**
- 2 Ensure that your name, centre number and candidate number have been correctly written on the Answer Sheet provided.**
- 3 There are fifty (50) questions in this paper. Answer all the questions. For each question, there are four possible answers, A, B, C and D. Choose the one you consider correct and shade your choice in clear pencil on the separate Answer Sheet.**
- 4 Read very carefully the instructions on the answer sheet provided.**

Information for candidates

- 1 Each correct answer will score one mark. A mark will not be deducted for a wrong answer.**
- 2 Cell phones and calculators are not allowed in the examination room.**

SECTION A: MAPWORK AND BASIC TECHNIQUES

Questions 1 to 12 are based on the 1:50 000 map extract of Savanna (Jamaica).

- 1** What is the feature found in grid reference 276812?

 - A** Coral
 - B** Depression
 - C** Pond
 - D** Quarry
- 2** What is the vertical interval of the map?

 - A** 10m
 - B** 15m
 - C** 20m
 - D** 25m
- 3** What is the distance of class B road from the junction in grid square 2475 to the church in Fuller's field in grid square 2381?

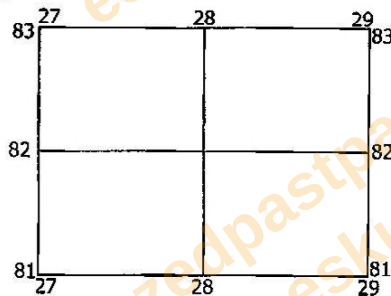
 - A** 6 500m
 - B** 7 500m
 - C** 8 500m
 - D** 9 500m
- 4** What is the bearing of the Wakefield factory in square 3274 from the school in square 2979?

 - A** 24°
 - B** 146°
 - C** 214°
 - D** 336°
- 5** What is the direction of the post office in grid 2882 from shed in square 3379?

 - A** Northeast
 - B** Northwest
 - C** Southeast
 - D** Southwest
- 6** From the map evidence, Savanna La-Mar is generally ...

 - A** a flat land.
 - B** a high land.
 - C** a mountainous land.
 - D** an undulating land.

- 7 What is the main economic activity of Savanna-La-Mar?
- A Agriculture
 - B Lumbering
 - C Mining
 - D Tourism
- 8 What type of vegetation is found east of Bath Pen factory?
- A Mixed or scattered cultivation
 - B Space bush
 - C Woodlands
 - D Woodlands and space bush
- 9 What is the general drainage pattern for Rickatts River and its tributaries?
- A Dendritic
 - B Trellis
 - C Radial
 - D Rectangular
- 10 Study the map extract below and answer the following question.

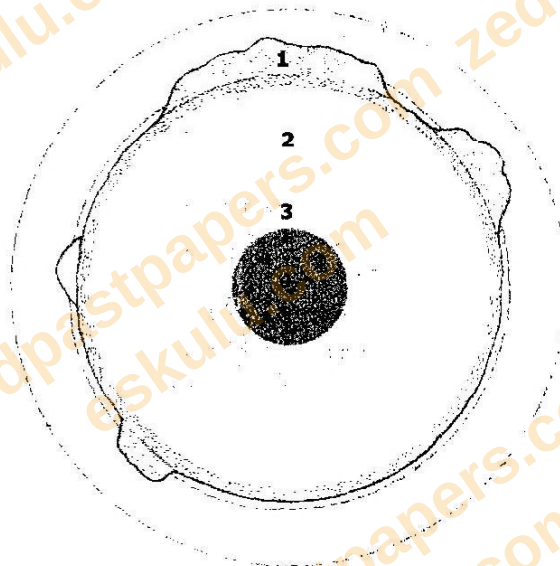


Which one of the following services is **not** provided in the extract above?

- A Housing
 - B Postal services
 - C Tourism
 - D Transport
- 11 The area south of McNeil's Land has no human settlements because, it is ...
- A a forest.
 - B a plantation.
 - C mountainous.
 - D swampy.
- 12 The dominant settlement pattern in Savanna-La-Mar is ...
- A dispersed.
 - B linear.
 - C nucleated.
 - D random.

SECTION B: ELEMENTS OF PHYSICAL GEOGRAPHY

- 13** Which among the following closely resembles the planet Uranus?
- A** Jupiter
 - B** Neptune
 - C** Pluto
 - D** Venus
- 14** When it is 3.00 pm in Greenwich, what is the local time of Sidney 151°E?
- A** 01.04 a.m
 - B** 01.04 p.m
 - C** 05.04 a.m
 - D** 05.04 p.m
- 15** Study the diagram below which shows the internal structure of the earth.



Which of the following shows the correct way the layers are arranged?

	1	2	3	4
A	Crust	Inner core	Outer core	Mantle
B	Crust	Mantle	Outer core	Inner core
C	Mantle	Crust	Outer core	Inner core
D	Outer core	Inner core	Mantle	Crust

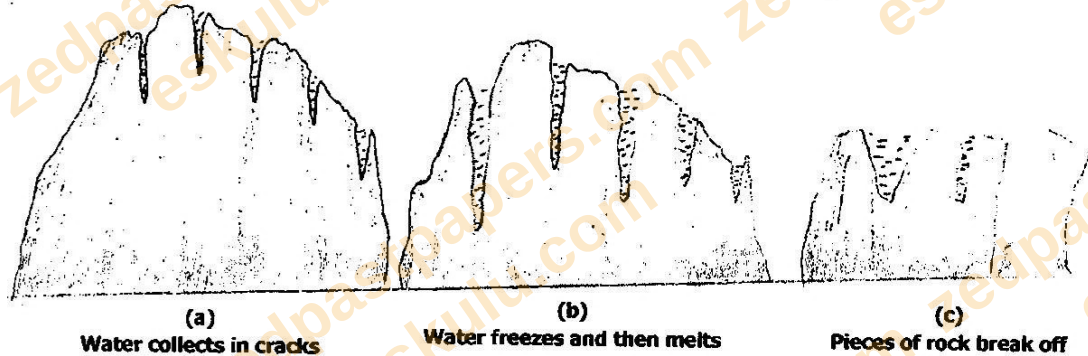
- 16** Which one of the following is an example of secondary effects of earthquakes?
- A** Collapse of buildings
 - B** Contamination of water
 - C** Damage to property
 - D** Death of people

- 17 Study the diagram of a volcano shown below.



Which of the following statements is true about this volcano? It is ...

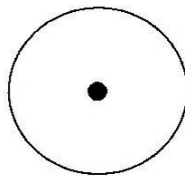
- A a composite volcano.
 - B a shield volcano.
 - C made up of acid lava.
 - D made up of basic lava.
- 18 Study the diagrams below which show a process of weathering.



What is this process of weathering shown above called?

- A Exfoliation
 - B Frost action
 - C Repeated temperature changes
 - D Repeated wetting and drying
- 19 Which one of the following affects all forms of mass movement?
- A Action of gravitational force.
 - B Alternate wetting and drying of the soil.
 - C Heating and cooling of the soil.
 - D Lubrication by rain water.
- 20 Why are the lower courses of rivers often densely populated?
- A There are fertile soils to support farming.
 - B There is plenty of fresh water for domestic use.
 - C The rivers are used for navigation.
 - D The rivers have plenty of fish.

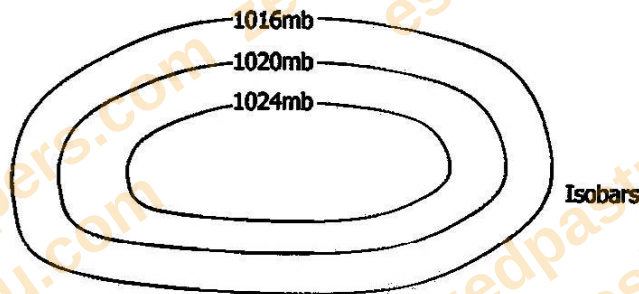
- 21** ... is the process by which rocks and pebbles carried by a river are broken into smaller particles as they hit against each other.
- A** Abrasion
 - B** Attrition
 - C** Hydraulic action
 - D** Solution
- 22** An intrusion of magma along a bedding plane is called a ...
- A** batholith.
 - B** dyke.
 - C** sill.
 - D** spine.
- 23** What is the most noticeable effect of global warming?
- A** Collapse of buildings where there was permafrost below.
 - B** Increase in flooding in low lying coastal areas.
 - C** Increase in ocean temperature at and near the equator.
 - D** Increase in tropical cyclones along the coastal areas.
- 24** The main reason for using mercury in a minimum thermometer is that it ...
- A** can be clearly seen.
 - B** contracts when heated and expands when cooled.
 - C** expands when heated and contracts when cooled.
 - D** has a high freezing point.
- 25** The diagram below depicts a symbol on a wind scale.



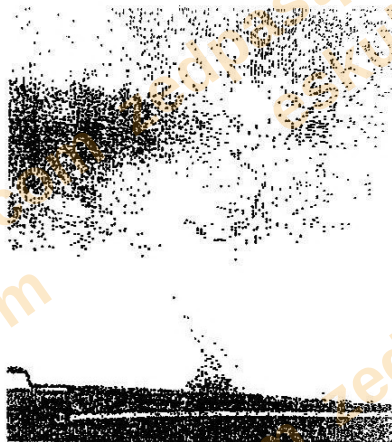
What is the description of the wind above?

- A** Calm
- B** Gentle breeze
- C** Light air
- D** Slight breeze

- 26 Study the diagram below which shows a pressure system.



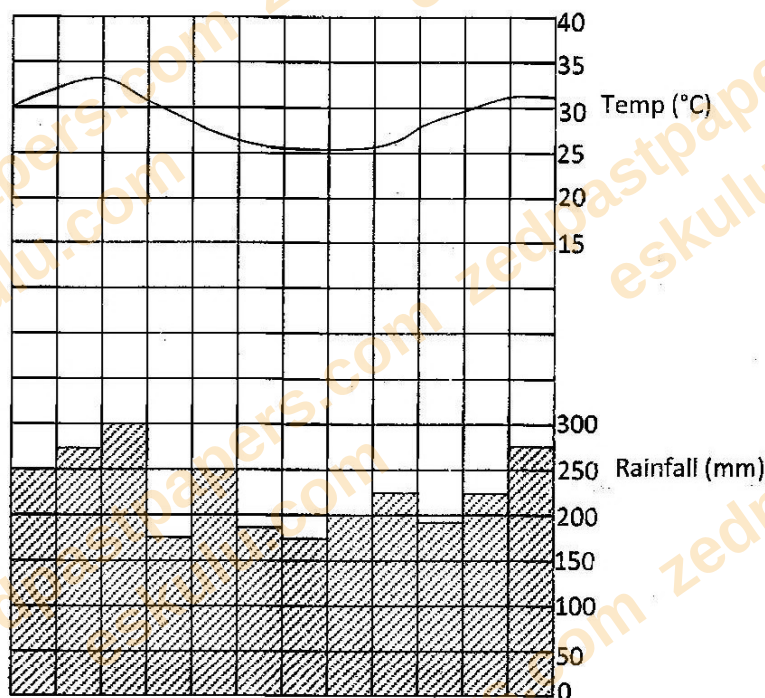
- What weather condition is associated with the pressure system shown above?
- A Cloudy
 - B Dry weather
 - C Heavy rainfall
 - D Windy conditions
- 27 Regarding the greenhouse effect, the role the greenhouse gases play is to ...
- A allow more heat from the sun to enter the earth's atmosphere.
 - B generate additional heat through various chemical reactions.
 - C help humid air to hold more heat within the atmosphere.
 - D trap heat that is reflected from the surface of the earth.
- 28 Study the photograph below.



Which of the following statements is true about the tornado shown in the photograph above? It is the ...

- A largest storm on earth.
- B most common storm on earth.
- C most violent storm on earth.
- D slowest storm on earth.

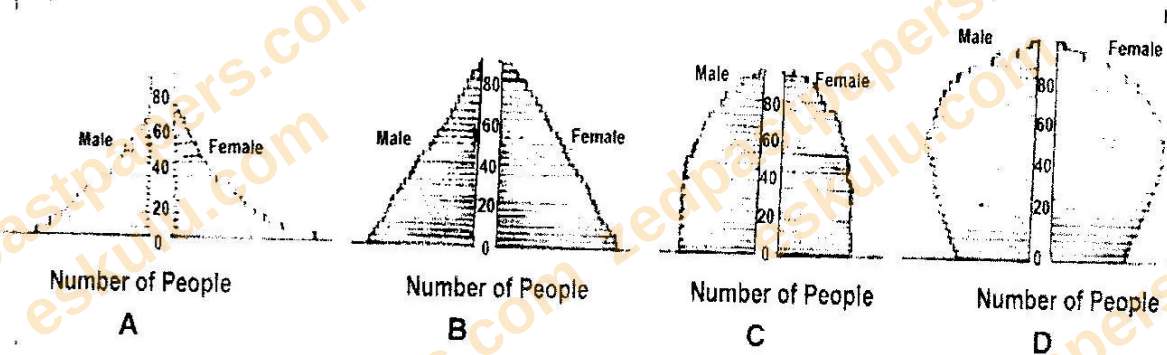
Questions 29 and 30 are based on the climatic graph shown below.



- 29 What is the annual range of temperature for the station above?
- A 3°C
 - B 5°C
 - C 7°C
 - D 9°C
- 30 What is the total rainfall of the three wettest months?
- A 520mm
 - B 640mm
 - C 760mm
 - D 850mm
- 31 Which natural region has the highest variety of plant species, insects, birds and animals?
- A Equatorial rain forest
 - B Mediterranean
 - C Savanna grassland
 - D Warm temperate forest
- 32 Lumbering in the hot wet equatorial region is difficult due to ...
- A multiple species of trees.
 - B trees are in pure stands.
 - C trees are tall.
 - D trees are umbrella shaped.

SECTION C: ELEMENTS OF WORLD HUMAN GEOGRAPHY

Questions 33 and 34 are based on the population pyramids shown below.

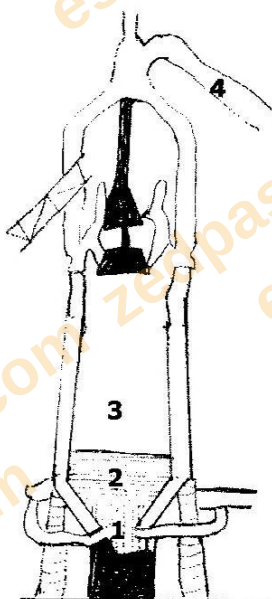


- 33 Which population structure **A**, **B**, **C** or **D** has the smallest proportion of young people and the largest proportion of elderly people?
- 34 Which population structure **A**, **B**, **C** or **D** has the lowest life expectancy?
- 35 What economic activities are associated with densely populated rural areas?
- A** Hunting and food gathering
 - B** Intensive rice cultivation
 - C** Shifting cultivation
 - D** Subsistence fishing
- 36 The factor which is the major contributor to urbanization worldwide is ...
- A** food security.
 - B** high birth rate.
 - C** industrialization.
 - D** migration.
- 37 Which one of the following is **not** an input on a rice farm in India?
- A** Agricultural machinery
 - B** Animal dung
 - C** Animal power
 - D** Family labour
- 38 Which one of the following pairs is **not** associated with extensive farming?
- A** Fertilizing and spraying
 - B** Ploughing and planting
 - C** Shearing and milking
 - D** Weeding and harvesting

- 39** Which of the following statements is more applicable to sheep farming than cattle ranching?
- A** Animals are usually fed on hay and supplementary feed.
 - B** Animals can thrive on scanty vegetation of semi-deserts.
 - C** Animals require fattening before they are slaughtered.
 - D** Farms have automatic feeding towers.
- 40** Which of the following describes extensive farming?
- A** Highly mechanised
 - B** High use of draft power
 - C** High use of human labour
 - D** High yield per hectare
- 41** Which one of the following does **not** favour the growth of cocoa?
- A** Deep well drained soils rich in iron and potassium.
 - B** High and evenly distributed rainfall above 1300mm.
 - C** High relative humidity.
 - D** Temperatures of 17°C and below throughout the year.
- 42** Which of the following is a cereal crop?
- A** Barley
 - B** Beans
 - C** Cassava
 - D** Tea
- 43** The type of coal which produces the greatest heat per volume and is the cleanest is ...
- A** anthracite.
 - B** bituminous.
 - C** lignite.
 - D** peat.
- 44** Which one of the following is **not** a characteristic of HEP? It ...
- A** can be transmitted over long distances.
 - B** is a wasting asset.
 - C** is easy to use.
 - D** is renewable.

- 45** Which of the following may attract dam construction for power generation?
- A** A large river located at the equator near expanding industries with a very steep gradient.
 - B** A river which has formed a steep sided gorge in hard rock near mineral deposits.
 - C** A river with plenty of rapids and waterfalls and plenty of reliable water supply.
 - D** A shallow river with a wide flood plain which is used for sugarcane growing.
- 46** In the refining of oil which of the following products is extracted at the highest temperature?
- A** Bitumen
 - B** Diesel
 - C** Kerosene
 - D** Petrol

- 47** Study the diagram of the blast furnace below.



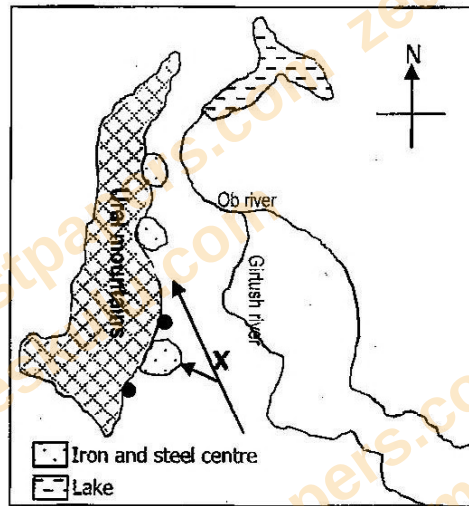
What materials are found at **1**, **2**, **3** and **4** areas of the blast furnace?

	1	2	3	4
A	Molten iron	Mixture of iron ore, coke and limestone	Gas	Slag
B	Molten iron	Slag	Mixture of iron ore, coke and limestone	Gas
C	Slag	Mixture of iron ore, coke and limestone	Molten iron	Gas
D	Slag	Molten iron	Gas	Mixture of iron ore, coke and limestone

48 Which of the following is the largest producer of iron and steel?

- A Britain
- B Germany
- C Japan
- D USA

49 Study the map below showing iron and steel centres of the Ural region in Russia.



What raw material is moved along the route represented by arrow 'X'?

- A Coal
- B Iron ore
- C Limestone
- D Scrap metal

50 The iron ore which is reddish and extracted from the sedimentary rock is ...

- A Haematite.
- B Limonite.
- C Magnetite.
- D Siderite.



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Question SECTION A: MAPWORK AND BASIC TECHNIQUES (Q1-12).**Questions based on the 1:50,000 map extract of Savanna-La-Mar, Jamaica.**

*** NOTE: as with the previous papers, the enclosed 1:50,000 survey map is a SEPARATE PHYSICAL INSERT not part of this scanned PDF. All 12 items are flagged as NOT ANSWERABLE FROM THE EXTRACT, including item 10 whose printed grid excerpt is entirely empty (no features reproduced at all); unlike the Victoria Falls/Mauritius papers, this less widely-known Jamaican town offers no general-knowledge escape route.

- 1 [FLAG -- missing map insert] Feature found at grid reference 276812.
- 2 [FLAG -- missing map insert] Vertical interval of the map.
- 3 [FLAG -- missing map insert] Distance of the class B road between the given junction and church.
- 4 [FLAG -- missing map insert] Bearing of the Wakefield factory from the school.
- 5 [FLAG -- missing map insert] Direction of the post office from the shed.
- 6 [FLAG -- missing map insert] General relief of Savanna-La-Mar.
- 7 [FLAG -- missing map insert] Main economic activity of Savanna-La-Mar.
- 8 [FLAG -- missing map insert] Vegetation type found east of Bath Pen factory.
- 9 [FLAG -- missing map insert] General drainage pattern of Rickatts River and its tributaries.
- 10 [FLAG -- missing map insert] The printed grid excerpt is entirely empty (no features reproduced), so which service is NOT provided cannot be read from it.
- 11 [FLAG -- missing map insert] Reason the area south of McNeil's Land has no human settlements.
- 12 [FLAG -- missing map insert] Dominant settlement pattern in Savanna-La-Mar.

Question SECTION B: ELEMENTS OF PHYSICAL GEOGRAPHY (Q13-32).**Standard physical-geography theory plus self-contained printed diagrams.**

Answer: 13 (B) Neptune -- Uranus and Neptune are the solar system's two 'ice giants', very similar in size and composition, unlike the different gas giant Jupiter, dwarf planet Pluto or rocky Venus.

Answer: 14 (A) 01:04 a.m -- Sydney (151 degrees E) is about 10 hours 4 minutes ahead of Greenwich; 3:00pm + 10:04 = 01:04am the next day.

Answer: 15 (B) 1=Crust, 2=Mantle, 3=Outer core, 4=Inner core -- reading the earth's internal structure from the thin outer layer inward: crust, then the thick mantle, then the outer core, with the innermost core at the centre.

Answer: 16 (B) Contamination of water -- damaged pipes/sewage mixing with water supplies is a secondary (indirect, knock-on) effect of an earthquake, unlike the primary/direct effects of building collapse, property damage and death.

17 [FLAG -- best-effort] The diagram shows a single, steep-sided symmetrical cone of speckled (ash/cinder-like) material around a solid central vent, without any visible alternating layering; this is most consistent with a steep cone built from thick, viscous acid lava, giving best guess (c), though the image could also be read as a simplified composite-volcano cross-section.

Answer: 18 (B) Frost action -- water collecting in cracks, freezing and expanding, then melting, repeatedly breaking off pieces of rock, is the definition of frost action (freeze-thaw weathering).

Answer: 19 (A) Action of gravitational force -- gravity underlies every form of mass movement (creep, slides, flows, falls).

Answer: 20 (A) There are fertile soils to support farming -- the fertile alluvial soils of a river's lower course/floodplain support intensive agriculture, historically attracting dense populations.

Answer: 21 (B) Attrition -- attrition is the wearing down of transported rock material as pieces collide and rub against each other in the river's load.

Answer: 22 (C) Sill -- a sill is an intrusion of magma injected along (parallel to) existing rock bedding planes, unlike a dyke (cuts across layers), batholith (large deep-seated mass) or volcanic spine.

Answer: 23 (B) Increase in flooding in low lying coastal areas -- rising sea levels from melting ice and thermal expansion of oceans make coastal flooding the most widely observed and cited effect of global warming.

Answer: 24 (C) Expands when heated and contracts when cooled -- this is the genuine physical property of mercury (and of substances generally), distinguishing it from the incorrect reversed statement in option (b).

Answer: 25 (A) Calm -- an open station circle with no wind staff or barbs at all (just the station dot) represents completely calm conditions (no wind).

Answer: 26 (B) Dry weather -- pressure increasing toward the centre (1024mb) identifies an anticyclone (high-pressure system), which is associated with settled, dry weather.

Answer: 27 (D) Trap heat that is reflected from the surface of the earth -- greenhouse gases absorb and re-radiate outgoing longwave (heat) radiation from the earth's surface, preventing it from escaping directly to space.

Answer: 28 (C) Most violent storm on earth -- tornadoes concentrate extremely high wind speeds in a small area, making them the most violent (though not the largest) storm type on earth.

29 [FLAG -- best-effort, precise graph reading] The temperature curve on the climatic graph appears fairly flat with only a modest seasonal hump, suggesting a small annual range; best guess is (a) 3 degrees C, though the exact peak/trough values could not be measured with full confidence from the rendered graph.

30 [FLAG -- best-effort, precise graph reading] Summing the three tallest rainfall bars on the graph gives an estimate in the region of 700-800mm; best guess is (c) 760mm, though the exact bar heights could not be measured with full confidence from the rendered graph.

Answer: 31 (A) Equatorial rain forest -- equatorial rainforest hosts by far the greatest biodiversity (plant, insect, bird and animal species) of any natural region.

Answer: 32 (A) Multiple species of trees -- equatorial rainforest contains a great mixture of different tree species per hectare (rather than single-species stands), making selective commercial logging difficult and costly.

Question SECTION C: ELEMENTS OF WORLD HUMAN GEOGRAPHY (Q33-50).
Standard human-geography theory plus self-contained printed diagrams.

Answer: 33 (D) Pyramid D -- pyramid D's barrel-like shape (wide through most age bands, narrowing only near the very top) indicates a low proportion of young people and a comparatively large elderly population, unlike the broad-based, youthful pyramids A-C.

Answer: 34 (B) Pyramid B -- pyramid B's very broad base narrowing extremely steeply with age indicates high fertility combined with high mortality at every age band, giving the lowest life expectancy of the four.

Answer: 35 (B) Intensive rice cultivation -- labour-intensive wet-rice farming is the classic economic activity supporting very high rural population densities, notably across South and East Asia.

Answer: 36 (C) Industrialization -- the growth of industry and the jobs it creates is the major worldwide driver of rural-to-urban migration and urbanization.

Answer: 37 (A) Agricultural machinery -- traditional Indian rice farms rely on family labour, animal power and animal dung (manure) rather than mechanised equipment.

Answer: 38 (C) Shearing and milking -- these regular, hands-on livestock-care tasks are typical of intensive dairy/sheep farming, unlike the large-scale mechanised tasks of fertilizing/spraying, ploughing/planting and weeding/harvesting associated with extensive farming.

Answer: 39 (B) Animals can thrive on scanty vegetation of semi-deserts -- sheep are hardier than cattle and can survive on the sparse grazing of semi-arid land, unlike cattle which need better pasture.

Answer: 40 (A) Highly mechanised -- extensive farming (e.g. prairie wheat farming, ranching) is characterised by large-scale mechanisation with low labour input per hectare, unlike the high-labour, high-yield intensive systems.

Answer: 41 (D) Temperatures of 17 degrees C and below throughout the year -- cocoa needs consistently hot tropical temperatures (around 24-27 degrees C); a cool 17 degrees C climate would not favour its growth, unlike well-drained fertile soils, heavy rainfall or high humidity.

Answer: 42 (A) Barley -- barley is a cereal (grain) crop, unlike beans (legume), cassava (root crop) or tea (beverage crop).

Answer: 43 (A) Anthracite -- anthracite has the highest carbon content of the coal types, giving it the greatest heat value per volume and the cleanest burn.

Answer: 44 (B) Is a wasting asset -- hydro-electric power is a renewable resource (not a wasting/depleting one like fossil fuels), making this NOT a characteristic of HEP.

Answer: 45 (C) A river with plenty of rapids and waterfalls and plenty of reliable water supply -- natural elevation drops (rapids/waterfalls) combined with a dependable year-round flow are the ideal physical conditions for hydro-electric dam construction.

Answer: 46 (A) Bitumen -- bitumen is the heaviest fraction of crude oil, extracted at the highest temperature at the bottom of the fractionating column.

Answer: 47 (B) 1=Molten iron, 2=Slag, 3=Mixture of iron ore/coke/limestone, 4=Gas -- reading the blast furnace from bottom to top: molten iron is tapped at the base, slag is tapped just above it, the main shaft holds the raw charge (ore, coke and limestone), and waste gases exit at the

top.

48 [FLAG -- best-effort, dataset-year sensitive] Among Britain, Germany, Japan and the USA, the largest producer of iron and steel depends on the specific year referenced by this curriculum's dataset; the USA has traditionally been cited as a leading producer in various editions of this course, so (d) USA is the best guess, though Japan has also led at various points.

Answer: 49 (B) Iron ore -- arrow X runs from the Ural Mountains' mineral deposits toward the marked iron and steel centres, representing the local movement of iron ore (for which the Urals are famous) to the processing centres.

Answer: 50 (A) Haematite -- haematite is the reddish iron ore of sedimentary origin, the most economically important iron ore worldwide.

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