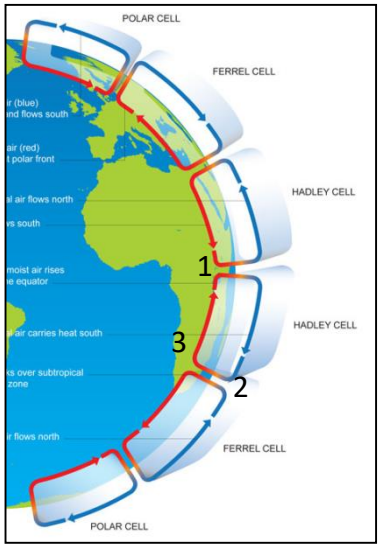
Weather hazards

1. Study Figure 1 showing global atmospheric circulation

Figure 1



Which **three** of the following annotations could be added to the diagram? (3 marks)

a) At point 1: Warm air rises at the equator, creating low pressure and rainfall

b) At point 1: Warm air rises at the equator causing high pressure and rainfall

c) At point 2: Cool air sinks at 30 degrees north and south of the equator

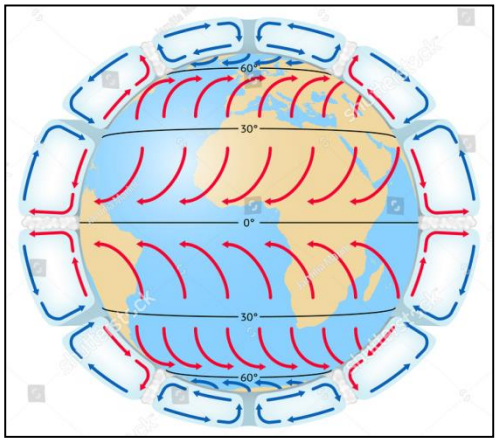
d) At point 2: Warm air causes cooler air to sink but only over Africa

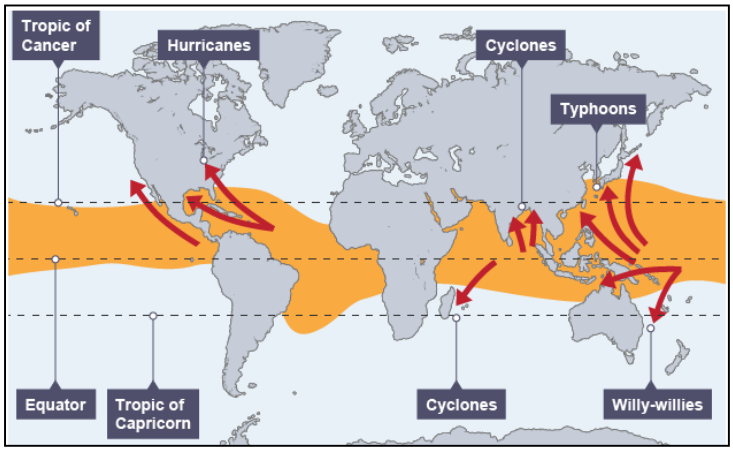
e) At point 3: Trade winds move warm air north across the surface of the earth

f) At point 3: As warm air moves north, it cools down.

2. showing the global distribution of tropical storms.

Figure 2 Global atmospheric circulation and the global distribution of tropical storms





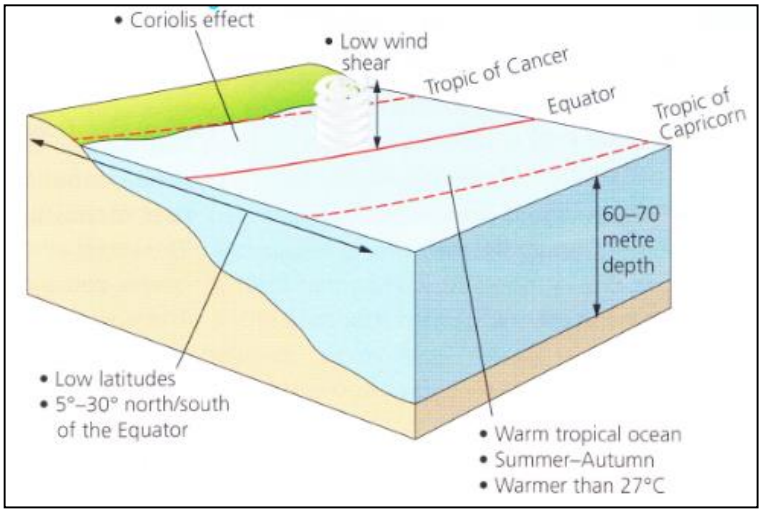
2. With reference to Figure 1 and Figure 2, explain the link between the global atmospheric circulation model and the formation of tropical storms. (4 marks)

3. With reference to Figure 2, describe the global distribution of tropical storms. (2 marks)

4. With reference to Figure 2, identify the relationship that exists between the direction of movement of tropical storms and the global atmospheric circulation model. (2 marks)

5. Study Figure 3 which shows the conditions for a tropical storm to occur

Figure 3



With reference to Figure 3 and your own knowledge, explain why tropical storms occur .

(4 marks)

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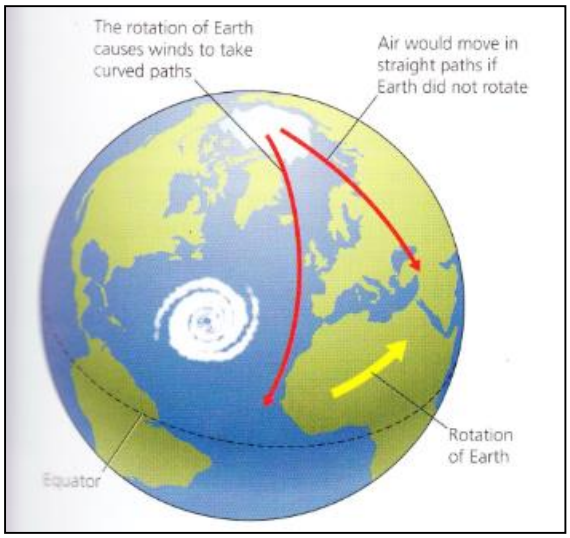
6. Study Figure 4

Figure 4



6. With reference to Figure 4 and your own knowledge, outline what causes tropical storms to rotate. (2 marks)

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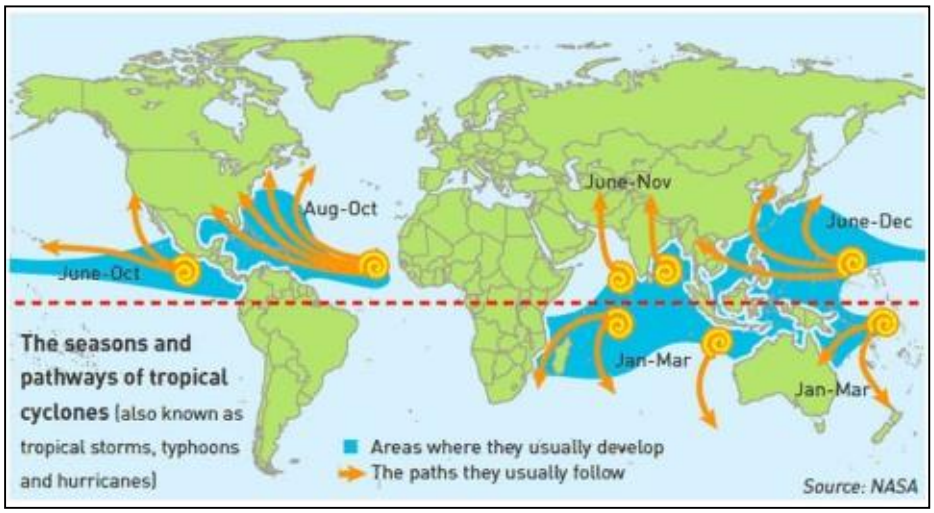
7. Study Figure 5 which shows the global distribution of tropical storms

Figure 5



Using Figure 5 and your own knowledge, explain the formation and development of tropical storms. (6 marks)

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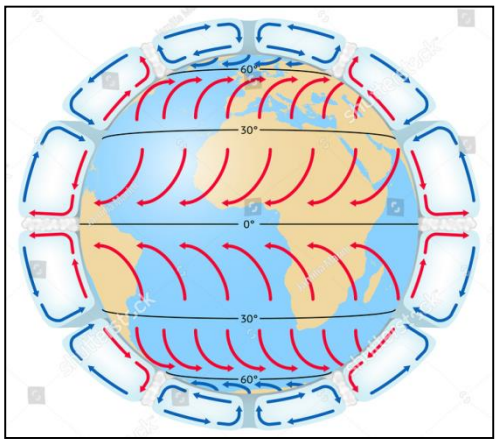
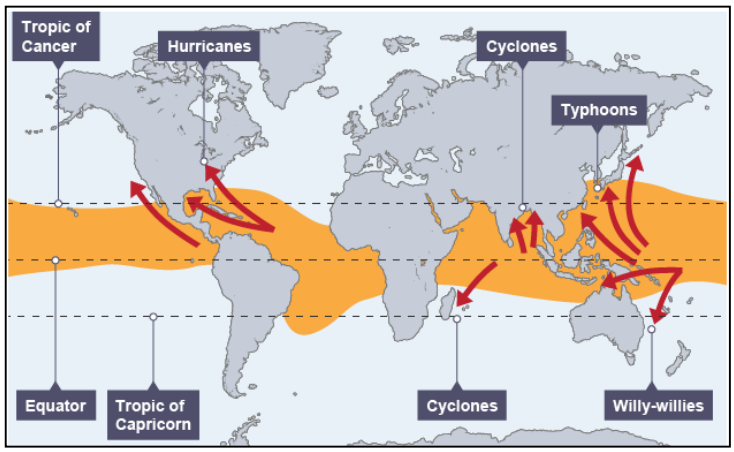
8. Which **two** statements about the formation of tropical storms are true? (2 marks)

a) Tropical storms only develop between August and September
b) Tropical storms develop over the equator
c) Tropical storms gain energy and they move over land
d) Tropical storms form above oceans where the sea surface temperature is over 27 degrees C
e) In the eye of a tropical storm, conditions are always calm

9. Study Figure 2

Figure 2 Global atmospheric circulation and the global distribution of tropical storms





Using Figure 2 to help you, complete the following sentences (3 marks)

Winds in the global atmospheric circulation move from areas of _____ pressure to areas of _____ pressure. Air from the equator rises and moves towards the. The air then cools down and sinks as it reaches the latitude of _____ degrees north and south of the equator.

10. Outline why tropical storms are only found in the areas shown in Figure 2. (2 marks)

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10 i) Describe why tropical storms pose a particular danger to low lying coastal areas (2 marks)

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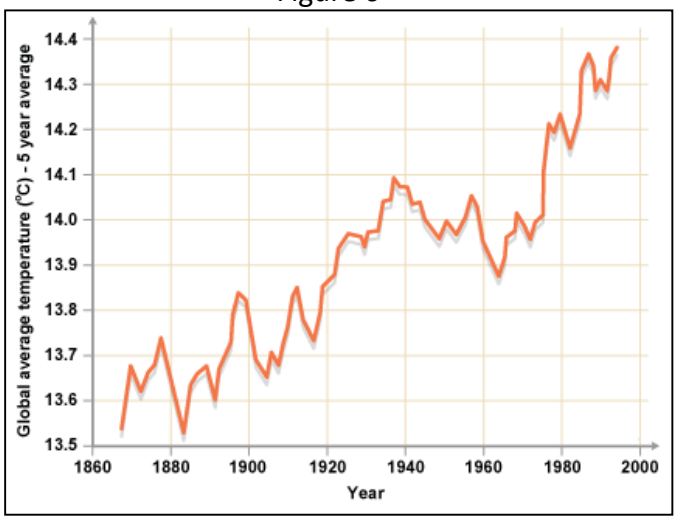
11. With reference to Figure 4 and your own knowledge, outline what causes tropical storms to rotate. (2 marks)

12. Study Figure 6 which shows changing global temperatures

Figure 6



With reference to Figure 6 and your own knowledge, suggest how the frequency of tropical storms might change if global temperatures continue to change in line with the pattern shown in Figure 6. (4 marks)

13. With reference to Figure 6 and your own knowledge, suggest how the intensity of tropical storms might change if global temperatures continue to change in line with the pattern shown in Figure 6. (4 marks)

14. With reference to Figure 6 and your own knowledge, suggest how the global distribution of tropical storms might change if global temperatures continue to change in line with the pattern shown in Figure 6. (4 marks)

15. Study Figure 7 which shows the secondary impacts of Tropical Storm Lee which affected the USA in 2011

Figure 7

Using Figure 7, define what is meant by a secondary impact (2 marks)

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16. Using Figure 7, identify two secondary impacts of Tropical Storm Lee. (2 marks)

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17. Study Figure 8 the aftermath of Cyclone Nargis in Myanmar

Figure 8

17. Outline two immediate responses that could help reduce the effects of a tropical storm such as that shown in Figure 8. (2 x 2 marks)

Response 1

Response 2

18. With reference to Figure 8 and a named example you have studied, assess the importance of different responses to a tropical storm. (9 marks + 3 SPaG)

18a . Outline why most tropical storms develop between 5 and 15 degrees north and south of the equator. (2 marks)

19. With reference to a named tropical storm you have studied, assess the effectiveness of responses to the effects of the storm. (9 marks +3 SPaG)

20. Assess the extent to which planning can reduce the impact of a tropical storm.

(9 marks +3 SPaG)

21. Discuss how the impacts of a tropical storm can be most effectively reduced. (6 or 9 marks)

22. Discuss the effectiveness of immediate and long term responses in reducing the impacts of a named tropical storm you have studied. (6 or 9 marks)

23. Study Figure 9, which shows the expected course of Hurricane Irma

Figure 9

With reference to Figure 9 and your own knowledge, explain how monitoring can reduce the impacts of a tropical storm. (6 marks)

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UK weather hazards

1. Describe the weather hazards that may affect the UK (4 marks)

2. Study Figure 1, extreme weather in the UK

Figure 1

Outline **two** possible impacts of the extreme weather in the UK shown in Figure 1. (2 x 2 marks)

3. Study Figure 2 showing a UK heatwave.

Figure 2

Suggest two possible effects of a heat wave in the UK (2 marks)

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4. Study Figure 3, a UK snow storm

Figure 3

Outline why snow in the UK can be considered to be a weather hazard. (2 marks)

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5. Suggest how the impacts of an extreme snow event in the UK can be reduced. (2 marks)

6. Using an example of an extreme weather event you have studied in the UK, evaluate the extent to which the economic effects were more significant than the social effects. (9 marks +3 SPaG)

7. Using an example of an extreme weather event you have studied in the UK, consider whether the economic, social or environmental impacts were more significant. Justify your choice.

(9 marks +3 SPaG)

8. Explain how management strategies can reduce the risk of weather hazards in the UK

(6 marks)

9. Using a named example of a recent UK extreme weather event, explain the cause of the event

(6 marks)