



Attempt questions first; check the separate key afterward. Show all working. Draw accurate figures where required.

A. Very short answers - 1 mark each

1. Define pressure.
2. State its SI unit.
3. A 100 N force acts over 2 m^2 . Find pressure.
4. Find pressure if the same force acts over 0.5 m^2 .
5. Why does a sharp knife cut more easily than a blunt one?
6. Explain why schoolbag straps are made broad.
7. Does liquid pressure generally increase with depth?
8. Describe a bottle-with-holes demonstration.

B. Short answers / practice - 2 marks each

9. At equal depth in the same resting liquid, is pressure approximately equal?
10. Explain why a dam is built thicker near its base.
11. Does air exert pressure?
12. Describe one simple demonstration of atmospheric pressure.
13. What generally happens to warm air relative to surrounding cooler air?
14. Explain convection in air.
15. Does wind generally flow from higher toward lower pressure near the surface?
16. Explain the formation of a sea breeze.
17. When does land breeze typically occur: day or night?
18. Compare land breeze and sea breeze with diagrams.
19. A 300 N load rests on an area 0.03 m^2 . Find pressure.
20. What area is needed to halve that pressure?

C. Application / reasoning - 3 marks each

21. Name a major energy source that helps tropical cyclones develop.

22. Explain how rising moist air and condensation strengthen a storm.

23. Is the eye of a cyclone always representative of the surrounding storm's danger?

24. Describe the eye, eyewall and surrounding winds.

25. Can lightning occur during a thunderstorm?

26. Explain why sheltering under an isolated tall tree is unsafe.

27. A 240 N force acts on 0.08 m^2 . Find pressure.

28. The contact area doubles at fixed force. What happens to pressure?

29. Explain why air usually moves into a region where warm air has risen.

30. Why can a sudden drop in air pressure be associated with stormy weather?

31. Explain why broad snowshoes reduce sinking into soft snow.

D. Extended practice - 5 marks per pair

32. Why can strong winds damage loosely attached roofs?
33. Explain how pressure differences and uplift contribute.
34. Should official cyclone warnings be ignored when the air briefly becomes calm?
35. Prepare a family storm-readiness plan covering warnings, shelter, supplies and avoiding floodwater/electrical hazards.

ANSWER KEY - Numerical / closed questions

- 1) Force per unit area. 2) Pascal, N/m^2 . 3) 50 Pa. 4) 200 Pa. 7) Yes. 9) Yes. 11) Yes. 13) It rises. 15) Yes, with other effects modifying direction. 17) Night. 19) 10000 Pa. 20) 0.06 m^2 . 21) Warm ocean water. 23) No. 25) Yes. 27) 3000 Pa. 28) It halves. 34) No.