2024/FYUG/EVEN/SEM/
PHYIDC–151T/029

FYUG Even Semester Exam., 2024

PHYSICS

(2nd Semester)

Course No. : PHYIDC–151T

(Understanding the Climate)

Full Marks : 70
Pass Marks : 28

Time : 3 hours

The figures in the margin indicate full marks for the questions

SECTION—A

Answer any *twenty* of the following questions : 1×20=20

1. What is the elementary idea of the atmosphere?

2. What is dynamic atmosphere?

3. Define ionosphere.

4. What do you mean by atmospheric pressure?

5. Define meteorology.

6. Define climate change.

7. What is deforestation?

8. What is industrialization?

9. Define cloud seeding.

10. What is lightning?

11. Define long-term climate changes.

12. What is global warming?

13. What is the variation of monsoon?

14. What increases the frequency and intensity of cyclones?

15. Define heat waves.

16. Which instrument is used to measure humidity?

17. Define radiation clouds.

18. Write down the SI unit of pressure.

19. What is radar?

20. What is the full form of SONAR?

21. Define atmospheric pollution.

22. What are the different types of pollutant?

23. Define trace gases.

24. What is tropospheric zone?

25. What is geo-engineering?

SECTION—B

Answer any *five* of the following questions : 2×5=10

26. How does the temperature and pressure vary in earth's atmosphere?

27. What are meteorological processes? Write down the different scales of meteorology.

28. What is the difference between weather and climate?

29. Name the different products formed during combustion of fossil fuel.

30. What are greenhouse gases?

31. What are the different causes of climate change?

32. What is the measurement of wind? Write the relationship between humidity and wind. 1+1=2

33. What are the applications of radars to study the atmospheric phenomenon?

34. What is the Kyoto protocol?

35. What is the difference between climate change mitigation and climate change adaptation?

SECTION—C

Answer any *five* of the following questions : 8×5=40

36. *(a)* What are the different layers of the atmosphere? Explain them. 5

(b) What are the basic conservation laws in atmospheric dynamics? 3

37. *(a)* What do you mean by spectral distribution? What are the different spectral regions of solar radiation? Write down the range of solar radiation spectrum. 1+3+1=5

(b) Explain the properties of solar radiation. 3

38. *(a)* What do you mean by thunderstorm? What are the causes of thunderstorm? How is the thunderstorm formed? 2+2+2=6

(b) What are the differences between cyclones and anticyclones? 2

39. *(a)* What is droplet growth? How are droplets formed? 1+2=3

(b) Define humidity. What are the differences between relative humidity and absolute humidity? What happens when humidity is high? 1+3+1=5

40. *(a)* What are the effects of global warming? Discuss the causes of global sea level rise. 3+2=5

(b) How do melting glaciers contribute to rising sea levels? 3

41. *(a)* How does climate change affect frequency? What are the different types of cyclones? 3+2

(b) What is the difference between tornado and hurricane? Define El Niño. 2+1

42. *(a)* What are the different methods of pressure measurements?

(b) What measures temperature, pressure and humidity of air in the upper atmosphere? How are the upper air conditions measured? Write down the SI unit of humidity. 1+3+1=5

43. *(a)* What is atmospheric aerosol? What is the classification of atmospheric aerosols? 1+2=3

(b) Explain the properties and concentration of atmospheric aerosols. 5

44. *(a)* Define climate change adaptation planning. What are the four adaptation strategies for climate change? 1+4=5

(b) What are the ways to mitigate climate change? 3

(Continued)

45. *(a)* What are geo-engineering proposals to mitigate climate change? What is the role of geo-engineering in climate change? 2+2=4

(b) Discuss the principles of Panchamrit. What is Panchamrit plan? 2+2=4

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