

Pabna University of Science and Technology
Department of Physics
Course No: PHY-2205
Course Title: Computer Fundamentals and Programming
Session: 2020-21

1. Write down a Fortran program to Convert the values of Celsius scale to Fahrenheit scale.
2. Write down a Fortran program to Convert the values of Fahrenheit scale to Celsius scale.
3. Write down a Fortran program to Convert the values of Fahrenheit scale to Kelvin scale.
4. Write down a Fortran program to Convert the values of Kelvin scale to Fahrenheit scale.
5. Write down a Fortran program to Convert the values of Celsius scale to Kelvin scale.
6. Write down a Fortran program to Convert the values of Kelvin scale to Celsius scale.
7. Convert meter in decimeter, centimeter and millimeter.
8. Convert pound to kilogram.
9. You have the values of sides of a triangle. Write down the equation for calculating the area of the triangle. Write down a Fortran program for calculating of area of the triangle.
10. You have the values of base and height of a triangle. Write down the equation for calculating the area of the triangle. Write down a Fortran program for calculating the area of the triangle.
11. You have the values of sides of a triangle. Write down the equation for calculating the area of the triangle. Write down a Fortran program for calculating of area of the triangle.
12. You have the values of vertices coordinate of a triangle. Write down the equation for calculating the area of the triangle. Write down a Fortran program for calculating the area of the triangle.
13. You have the values of radius of a sphere. Write down the equation for calculating the surface area and volume of the sphere. Write down a Fortran program for calculating the surface area and volume of the sphere.
14. You have the values of sides of a rectangle. Write down the equation for calculating the perimeter and area of the rectangle. Write down a Fortran program for calculating the perimeter and area of the rectangle.
15. You have the values of sides of a square. Write down the equation for calculating the perimeter and area of the square. Write down a Fortran program for calculating the perimeter and area of the square

Pabna University of Science and Technology
Department of Physics
Course No: PHY-2205
Course Title: Computer Fundamentals and Programming
Session: 2020-21

16. You have the values of sides of a cuboid. Write down the equation for calculating the diagonal, area and volume of the cuboid. Write down a Fortran program for calculating the diagonal, area and volume of the cuboid.
17. You have the values of sides of a cubic. Write down the equation for calculating the diagonal, area and volume of the cubic. Write down a Fortran program for calculating the diagonal, area and volume of the cubic.
18. You have three numbers. Write down a Fortran program for finding largest number among three numbers.
19. You have three numbers. Write down a Fortran program for finding lowest number among three numbers.
20. Write down the equation for area, perimeter of a circle. Write down a Fortran program to calculate area and perimeter of a circle.
21. Write down a Fortran program for finding the sum of the series $1 + 2 + 3 + \dots + n$.
22. Write down a Fortran program for finding the sum of the series $1 + 3 + 5 + \dots + (2n + 1)$.
23. Write down a Fortran program for finding the sum of the series $2 + 4 + 6 + \dots + 2n$.
24. Write down a Fortran program for finding the sum of the series $1.2.3 + 2.3.4 + 3.4.5 + \dots + n(n + 1)(n + 2)$.
25. Write down a Fortran program for finding the sum of the series $\sin a + \sin 2a + \sin 3a + \dots + \sin na$.
26. Write down a Fortran program for finding the sum of the series $\cos a + \cos 2a + \cos 3a + \dots + \cos na$.
27. Write down a Fortran program for finding the sum of the series $1 + \frac{1}{3} + \frac{1}{3^2} + \dots + \frac{1}{3^n}$.
28. Write down a Fortran program for finding the sum of the series $1 + \frac{2}{3} + \frac{3}{3^2} + \dots + \frac{n}{3^n}$.
29. Write down a Fortran program for finding the sum of the series $1^2 + 2^2 + 3^2 + \dots + n^2$.
30. Write down a Fortran program for finding the sum of the series $1^2 + 3^2 + 5^2 + \dots + (2n + 1)^2$.

Pabna University of Science and Technology
Department of Physics
Course No: PHY-2205
Course Title: Computer Fundamentals and Programming
Session: 2020-21

31. Write down a Fortran program for finding the sum of the series $2^2 + 4^2 + 6^2 + \dots + (2n)^2$.
32. Write down a Fortran program for finding the sum of the series $1^3 + 2^3 + 3^3 + \dots + n^3$.
33. Write down a Fortran program for finding the sum of the series $\frac{1}{1.2.3} + \frac{1}{2.3.4} + \frac{1}{3.4.5} + \dots + \frac{1}{n(n+1)(n+2)}$.
34. Write down a Fortran program for finding the sum of the series $1 + \frac{1}{2} + \frac{1}{3} + \dots + \frac{1}{n}$.
35. Write down a Fortran program for finding the sum of the series $1 + \frac{1}{2} + \frac{1}{4} + \frac{1}{8} \dots + \frac{1}{256}$.
36. Write down a Fortran program for finding the sum of the series $(0.5)^2 + 1^2 + (1.5)^2 + \dots + 10^2$.
37. Write a Fortran program to evaluate the following function
- $$1. f(x,y) = \begin{cases} x + y, & \text{if } x \geq 0, y \geq 0 \\ x - y, & \text{if } x \geq 0, y < 0 \\ -x + y, & \text{if } x < 0, y \geq 0 \\ -x - y, & \text{if } x < 0, y < 0 \end{cases}$$
38. Write a Fortran program to evaluate the following function
- $$f(x) = \begin{cases} 2, & \text{when } x = 2 \\ x + 1, & \text{when } x < 2 \\ x + 4, & \text{Otherwise} \end{cases}$$
39. Write a Fortran program to evaluate the following function
- $$s(x) = \begin{cases} 3, & \text{if } x > 3 \\ x, & \text{if } 3 \geq x \geq -3 \\ -3, & \text{if } x < -3 \end{cases}$$
40. You have continuous assessment and final marks of a course. Write a Fortran program for getting letter grade and grade point.