301 - (04)

1543

Code : 15SC03S

Register Number | | | | | | | | | | |

I/II Semester Diploma Examination, Nov./Dec. 2018

APPLIED SCIENCE

Time : 3 Hours] **[Max. Marks : 100**

Note : (i) Answer any **ten** questions from Section – **A**, each carries **two** marks.
(ii) Answer any **ten** questions from Section – **B**, each carries **five** marks.
(iii) Answer any **five** questions from Section – **C**, each carries **six** marks.

SECTION – A
(Answer any **ten** questions)

1. Define unit of a physical quantity. **2**
2. Define pitch of s screw. **2**
3. State Lami's Theorem. **2**
4. Define unlike parallel forces. **2**
5. Define elasticity. **2**
6. Write any two applications of viscosity. **2**
7. State Bernoulli's Theorem. **2**
8. Define heat and write SI unit of heat. **2**
9. State first law of thermodynamics. **2**
10. Define mechanical waves. **2**
11. Explain the effect of humidity on velocity of sound in air. **2**
12. Define Nano-technology. **2**
13. Write any two applications of optical fibre. **2**
14. Write any two types of fuel cells. **2**
15. Define polymerization. **2**

SECTION – B

(Answer any **ten** questions)

16. Draw a neat diagram of screw gauge and label its parts. 5

17. Define moment of force, mention its SI unit. Write the conditions of equilibrium of coplanar parallel forces acting on a body. 5

18. Define Young's modulus. Derive an expression for Young's modulus. 5

19. Define Surface tension. Mention the factors which affect surface tension. 5

20. Explain streamline flow and turbulent flow with one example for each. 5

21. Define Convection. Write any three applications of convection. 5

22. Define C_p and C_v. Write the relationship between them. 5

23. Define Stationary waves. Write characteristics of stationary waves. 5

24. Define Beats. Write any three applications of beats. 5

25. Write the classification of electromagnetic waves. 5

26. Explain Satellite communication. Write any two advantages of satellite communication. 5

27. Write the postulates of Arrhenius theory of electrolytic dissociation. 5

28. Define composite materials. Write any three advantages of composite materials. 5

29. Write any five preventive methods of corrosion. 5

30. Define Mineral and ore. Write the purpose of making alloys. 5

SECTION – C

(Answer any **five** questions)

31. Describe an experiment to verify the law of parallelogram of forces. **6**

32. Describe an experiment to determine the co-efficient of viscosity of water by Poiseuille's method. **6**

33. State Charle's law. 2 litre of air at 20 °C is heated to 80 °C. Calculate the new volume, if the pressure remains constant. **6**

34. Define simple harmonic motion. Derive an expression for displacement of a particle executing SHM. **6**

35. Discuss Newton-Laplace equation for velocity of sound in air. **6**

36. Describe an experiment to determine the unknown frequency of a tuning fork using sonometer by absolute method. **6**

37. Write the principle of Laser. Write the applications of Laser. **6**

38. Define pH of a solution. Write any four applications of pH value. **6**
