1349

Code : 15SC-03S

Register Number | | | | | | | |

I/II Semester Diploma Examination, Nov./Dec. 2016

APPLIED SCIENCE

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

Note : (i) Answer any **10** questions from Section-**A** – each carries **2** M.

(ii) Answer any **10** questions from Section-**B** – each carries **5** M.

(iii) Answer any **05** questions from Section-**C** – each carries **6** M.

SECTION – A $2 \times 10 = 20$

1. Name supplementary units of S.I. system with their physical quantities.
2. Define pitch of a Screw.
3. Define equilibrant.
4. Define moment of force.
5. Defining stress, write its S.I. unit.
6. Define cohesive force.
7. List any four applications of capillarity.
8. Define specific heat of a gas at content volume.
9. Defining heat, write its S.I. unit.
10. Define Beat frequency.
11. Define Resonance.
12. Write any two properties of Electro-magnetic waves.
13. Write any two uses of X-rays.
14. Define Ore.
15. Write any two disadvantages of composite materials.

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SECTION – B

$5 \times 10 = 50$

16. Stating Lami's theorem, write line diagram and equations of Lami's theorem.
17. Draw neat diagram of screw gauge and name its parts.
18. Explain stress-strain graph.
19. Define surface tension of liquids. Write any four applications of surface tension of liquids.
20. Defining Thrust. Derive $P = \rho gh$ for a liquid at rest.
21. Defining conduction and convection, write one application of each.
22. Defining isothermal process, state first and second laws of thermodynamics.
23. Defining free and forced vibrations, write any two examples for each.
24. Defining beats, write any three applications of beats.
25. Defining Nano-technology, write any three advantages of Nano-technology.
26. Defining optical fiber, write any three applications of it.
27. State two Faraday's laws of electrolysis. Give two applications of electrolysis.
28. Defining Alloy, write any three purposes of making alloys.
29. Explaining addition polymerization, write any two examples of addition polymerization.
30. Define fuel cells and write any three types of fuel cells.

SECTION – C

$6 \times 5 = 30$

31. Describe an experiment to verify law of parallelogram of forces.
32. Defining Young's modulus, obtain an expression for Young's modulus.
33. The volume of a gas at 27 °C and 2 atmosphere pressure is 2 litres. If the pressure is doubled and absolute temp. is reduced to half, calculate New volume of gas.
34. Derive an expression velocity of a particle in its Simple Hormonic Motion.
35. Discuss Newton-Laplace equation for velocity of sound in air.
36. Describe an experiment to determine velocity of sound in air by Resonance Air Column method.
37. Define satellite communication. Write the block diagram of communication system.
38. Defining corrosion, explain electro-chemical theory of corrosion.
