Section-D

Note: Long answer questions. Attempt any Two question out of Three Question. (2x8=16)

Q.23 State and explain laws of thermodynamics.

Q.24 a) Explain principle of refrigeration.

b) Explain radiant light flux and illuminations.

Q.25 Evaluate $\int x^2 \cos x \, dx$ with respect to x.

No. of Printed Pages : 4
Roll No.....

180212

1st Year Annual Pattern (Re-app)

Branch : Architecture

Subject : Applied Science and Mathematics

Time : 3 Hrs. **M.M. : 60**

SECTION-A

Note: Multiple Choice Questions. All Questions are compulsory. (6x1=6)

Q.1 The S.I. unit of specific heat is :

a) J/kg/K b) J/K

c) Joule d) None of these

Q.2 Green house effect is due to:

a) Burning of fossil fuels b) Deforestation

c) Industrial waste d) All of them

Q.3 The device that converts heat to work in called:

a) Solar Cell b) Heat Engine

c) Both of them d) None of them

Q.4 The value of $\sin 30^0$:-

a) 0 b) 1

c) $\frac{1}{2}$ d) -1

Q.5 In which quadrant does 750^{o} does lies:-

a) 2nd b) 4th

c) 3rd d) 1st

Q.6 $f_0^2 x.\,dx =$

a) 1/2 b) 0

c) 1 d) 3/2

Section-B

Note: Objective/Completion type questions. All questions are compulsory. (6x1=6)

Q.7 Solar cell is also called_____.

Q.8 Define thermal stress.

Q.9 The branch of Physics which deal with the production of best sound effects in buildings is called_____.

Q.10 Evaluate $\sin 10^0 \cos 20^0 + \cos 10^0 \sin 20^0$.

Q.11 Convert 150^0 in radian.

Q.12 $^{d}/_{dx}(\tan x) =$ ……..

Section-C

Note: Short answer type Question. Attempt any Eight questions out of Ten Questions. (8x4=32)

Q.13 Explain cohesive and adhesive forces with examples.

Q.14 Explain the principle of heat engine.

Q.15 Define reverberation time and how will you control reverberation time?

Q.16 Give any two methods two control humidity.

Q.17 Explain colour mixing.

Q.18 Prove that $\tan 15^0 + \cot 15^0 = 4$

Q.19 Differentiate $x^5 + 5x^4 + 4x^3 + 3x^2 + 2x + 1$ w.r.t.x.

Q.20 Evaluate $\int (x^3 + 3\,\text{Cos}\,x - 2e^x + 1).\,\text{Dx}$

Q.21 Differentiate $Y = x \sin x$ w.r.t.^{x}

Q.22 Exapress $\cos 5\theta + \cos 3\theta$ as product of trigonometric functions.