Q.31 State 5 uses of plastics.

Q.32 Solve the equation by elimination method :
$2x-y+3z=3, 4x+2y-z=7, x+3y+2z=9.$

Q.33 A solid sphere of radius 6c.m is melted to form a hollow right circular cylindrical tube of length 8c.m and external radius 10 c.m. find the thickness of the tube.

Q.34 A person standing on the bank of river observe that the angle of elevation of top of the tree on opposite bank is 45^0. When he moves 20 m away from bank, he finds angle of elevation to be 30^0. Find the height of tree.

Q.35 Write the derivative of $(x+2)^2(2x-3)$ with respect to x using product formula of differentiation.

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

Q.36 Give principle, construction and working of Bi-metallic thermometer.

Q.37 Write IUPAC names of following compounds _____ C_2H6, $CH_2=CHCH_3$, CH_3OH, C_3H_4, CH_3CHO

Q.38 Solve

a) $\int x \log x \, dx$ by parts method.

b) $\int_0^{p/2} \sin^7 x \cos^3 x \, dx$ using formula

$\int_0^{p/2} \sin^n x \cos^m x \, dx$

Roll No. .....

Architecture

Subject:- A. Second Mathematics

Time : 3Hrs. M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

Q.1 SI unit of force is called

a) Newton b) Kilogram

c) Centimeter d) ERG

Q.2 Force per Unit Area is called

a) Strain b) Work

c) Stress d) None of the above

Q.3 The thermometer which is based on Principle of Radiation is called

a) Bi-metallic Thermometer

b) Gas Thermometer

c) Pyrometer

d) None of the above

Q.4 The Force between similar types of molecules is called

a) Cohessive force b) Adhesive force

c) Pressure d) None of the above

Q.5 The amount of heat required for increasing the

temperature of 1 gm of substance through 1 degree centigrade is called

a) Heat Capacity b) Specific Heat

c) Kinetic energy d) None of above

Q.6 An important ore of iron is

a) Haematite b) Copper glance

c) Corendum d) Zinc blende

Q.7 Coating of iron sheets with _____is known as Galvanisation

a) Tin b) Magnesium

c) Chromium d) Zinc

Q.8 The value of $\log 16_2$ is

a) 8 b) 4

c) 3 d) none of these

Q.9 The unit of volume of sphere with radius in c.m is

a) Cubic c.m b) square c.m

c) c.m d) none of these

Q.10 In a right angles triangled, tanθ is the ratio of two sides are

a) Perpendicular & Base

b) Base & hypotenuse

c) Perpendicular & Hypotenuse

SECTION-B

Note: Objective type questions. All questions are compulsory. (10x1=10)

Q.11 What is the SI unit of Temperature?

Q.12 Define Amplitude.

Q.13 Define Humidity.

Q.14 Give formula for Reverberation time.

Q.15 Define Radiant Light Flux

Q.16 Define alloying.

Q.17 Define epoxy resins

Q.18 The angle between two lines can be measured in radian, grades &_____

Q.19 $\lim x \to \alpha \frac{x^n - a^n}{x - a} =$ _____

Q.20 $\int x^n \, dx =$ _____

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 Explain different types of Modulus.

Q.22 Define free and forced vibrations. Give examples

Q.23 Write short on First and Second law of thermodynamics.

Q.24 Give principles of Acoustic modeling.

Q.25 Define solar energy and explain working of solar cells.

Q.26 Explain in brief applications of water proofing and wetting.

Q.27 What are the primary colors. Explain color mixing.

Q.28 What are the uses of dimensional analysis.

Q.29 Explain electrorefining of copper.

Q.30 Define corrosion and its types.