

- Q.25 Find the area of rhombus whose diagonals are of length 10 c.m. and 8 c.m.
- Q.26 Define refractory and its types giving examples.
- Q.27 Define condensation polymerization with suitable example.
- Q.28 Define corrosion and also write three methods for its prevention
- Q.29 Write properties and uses of iron.
- Q.30 Draw flow diagram of manufacturing of steel.
- Q.31 Explain types of intermolecular forces.
- Q.32 Explain any five methods to control reverberation.
- Q.33 Explain free and resonant vibrations with examples.
- Q.34 Explain working of platinum resistance thermometer.
- Q.35 Explain greenhouse effect.

SECTION-D

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

- Q.36 Prove that $\tan 8^\circ = \frac{\cos 37^\circ - \sin 37^\circ}{\cos 37^\circ + \sin 37^\circ}$
- Q.37 a) Define thermo plastic and thermo setting plastic
b) Write five applications of plastic in industries.
- Q.38 State and prove law of conservation of energy

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120216/030216

1st Sem / Branch : Architecture
Subject:- Applied Science and Mathematics

Time : 3Hrs.

M.M. : 100

SECTION-A

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

- Q.1 How many terms are there in binomial expression of $(2x+y)^4$
a) 5 b) 4
c) 6 d) 3
- Q.2 $\log_a m^n = \dots\dots\dots$
a) $\log_a m \div \log_a n$ b) $\log_a m \times \log_a n$
c) $n \log_a m$ d) $m \log_a n$
- Q.3 The area of a circle whose diameter is 6 c.m. is.....
a) $6\pi \text{ c.m.}^2$ b) 36 c.m.^2
c) $9\pi \text{ c.m.}^2$ d) $36\pi \text{ c.m.}^2$
- Q.4 $2 \sin A \sin B = \dots\dots\dots$
a) $\cos(A-B) - \cos(A+B)$
b) $\sin(A+B) + \sin(A-B)$
c) $\sin(A+B) - \sin(A-B)$
d) $\cos(A+B) + \cos(A-B)$

- Q.5 Hoope's process is related to
- Copper
 - Aluminium
 - Steel
 - Iron
- Q.6 The monomer of polythene is
- Ethylene
 - Propene
 - Vinyl chloride
 - None of the above
- Q.7 An open window is a
- 0% absorber
 - 50% absorber
 - 100% absorber
 - None of the above
- Q.8 SI unit of force is
- Kelvin
 - Lumen
 - newton
 - dyne
- Q.9 SI unit of temperature is
- Newton
 - Joule
 - Erg
 - Kelvin
- Q.10 The ratio of force per unit area is
- Stress
 - Strain
 - Modulus of elasticity
 - None of the above

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SECTION-B

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

- Q.11 $\frac{d}{dx} (a^x) = \dots\dots\dots$
- Q.12 $\frac{d}{dx} (\tan x) = \dots\dots\dots$
- Q.13 The exponential form of $\log^3 243$ is.....
- Q.14 $\int \sec x \tan x \, dx = \dots\dots\dots$
- Q.15 Write one example of unsaturated hydrocarbon.
- Q.16 Write one use of copper.
- Q.17 The process of making a structure water resistant is called.....
- Q.18 A greenhouse is used for.....
- Q.19 Absorbing materialthe reverberation time.
- Q.20 SI unit of mass is.....

SECTION-C

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

- Q.21 Find the height of cylinder with a circular base of radius 20 c.m. and volume 132000 cubic centimeter.
- Q.22 Differentiate $y = \cos x e^{\sin x}$ w.r.t. x
- Q.23 Evaluate that $\frac{\cos 23^\circ + \sin 23^\circ}{\cos 23^\circ - \sin 23^\circ}$
- Q.24 Evaluate $\int (1 - \frac{1}{x\sqrt{x}}) \sqrt{x} \, dx$

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