

ANNEXURE – III

MODEL QUESTIONS FOR ENGINEERING

Mathematics (50 Questions of this type)

1. If 1, ω , ω^2 are the cube roots of unity then
$$\begin{vmatrix} 1 & \omega & \omega^2 \\ \omega & \omega^2 & 1 \\ \omega^2 & 1 & \omega \end{vmatrix} =$$

- a) 0 b) 1 c) 2 d) 3

2. $\lim_{n \rightarrow \infty} \frac{1^2 + 2^2 + \dots + n^2}{n^3} =$

- a) $\frac{1}{2}$ b) $\frac{1}{3}$ c) $\frac{1}{4}$ d) $\frac{2}{3}$

3. The particular integral of $(D^2 - 5D + 6)y = e^{4x}$ is

- a) $\frac{e^{4x}}{2}$ b) $2e^{4x}$ c) e^{4x} d) $\frac{e^{4x}}{3}$

Physics (25 Questions of this type)

1) A dimension less quantity

- a) Never has a unit b) May have a unit
c) Always has a unit d) Does not exist

2) The angle between two forces increases the magnitude of their resultant.

- a) Increases b) Decreases
c) First decreases then increases d) Remains unchanged.

3) The maximum velocity of a body vibrating with single harmonic motion has a period of $\pi/4$ & amplitude of 7 cm is

- a) 488 cm/s b) 56 cm/s c) 38.5 cm/s d) 55 cm/s

Chemistry (25 Questions of this type)

1. Which of the following orbital has less energy

- a) 3P b) 3d c) 4d d) 4f

2. Which of the following element has stable electronic configuration?

- a) H b) He c) Li d) Be

3. The pH of 0.001M NaOH is

- a) 1 b) 3 c) 11 d) 14

4. Brass is an alloy of

- a) Cu + Sn b) Cu + Zn c) Cu + Zn + Ni d) Fe + Cr + Ni

ENGINEERING PAPERS (100 Questions of this type)**I. Civil Engineering**

1. The maximum shear force for a simply supported beam carrying udl occurs at
 - (a) Ends
 - (b) centre
 - (c) One third span
 - (d) three fourth span
2. For an under reinforced beam section,
 - (a) Actual neutral axis= Critical neutral axis
 - (b) Actual neutral axis >Critical neutral axis
 - (c) Actual neutral axis< Critical neutral axis
 - (d) Actual neutral axis \leq Critical neutral axis
3. The coefficient of discharge (C_d) of a venturimeter is
 - (a) 0.98
 - (b) 0.877
 - (c) 0.64
 - (d) 0.707

II. Electrical and Electronics Engineering

- 1) In the 2-wattmeter method of measuring 3-phase power, the two watt meters indicate equal and opposite reading, then the power factor angle is _____ degrees lagging.
 - a) 60^0
 - b) 0^0
 - c) 300
 - d) 90^0
- 2) If a 220 v rated heater is used on 110 V supply, heat produced it will be _____ as much.
 - a) One half
 - b) Twice
 - c) one fourth
 - d) four times
- 3) Induction watt-hour meters are free from _____ errors
 - a) Phase
 - b) Creeping
 - c) Temperature
 - d) frequency

III.Mechanical Engineering

1. Magnetic particle inspection is conducted to
 - a) Ferro alloy components
 - b) Non magnetic components
 - c) Copper alloys
 - d) Nickel alloys
2. Name the boiler accessory among the following
 - a) Pressure gauge
 - b) Water level indicator
 - c) Blow off cock
 - d) Economizer
3. The subroutine can be called anywhere in the main program by giving subroutine number preceded by the letter
 - a) G
 - b) M
 - c) L
 - d) T

IV. Electronics and Communication Engineering

1. An example of square law device is
 - (a) Diode
 - (b) Resistor
 - (c) JFET
 - (d) SCR
2. TWT uses a helix
 - (a) To reduce the axial velocity of RF field
 - (b) To ensure broadband operation
 - (c) To increase the efficiency
 - (d) To reduce noise
3. Quality factor of a tuned circuit is
 - (a) Product of BW and f_{resonant}
 - (b) BW/f_{resonant}
 - (c) f_{resonant}/BW
 - (d) $2 f_{\text{resonant}}$

IX. Electronics and Instrumentation Engineering

- An n-bit register requires _____ no of flip flops.
a) 2n b) n+1 c) 2n d) n
- LVDT is used to measure _____ parameters.
a) Temperature b) displacement c) torque d) density
- The p^H of a solution is proportional to _____.
a) $\text{Log} [H^+]$ b) $-\text{log} [H^+]$ c) $-\text{log} [H^+]$ d) $1/\text{log} [H^+]$

X. Bio – Technology

- Which component of transcribed RNA in eukaryotes is present in the initial transcript but is removed before translation occurs
a) Intron
b) 3' poly A tail
c) Ribosome binding site
d) 5' cap
- A eukaryotic chromosome is made up of:
a) DNA only
b) Histones and nucleic acid
c) Centromeres and centrioles
d) DNA and RNA only

MODEL QUESTIONS FOR PHARMACY (200 questions)

- Hypotonic solution on injecting leads to
a) Osmosis b) Haemolysis
c) Crenulation d) Hydrotrophy
- The type of emulsion depends on
a) Method used b) Oil
c) Emulsifying agent d) Trituration
- An example of general anesthetic.
a) Diethyl ether b) Acetone
c) Morphine d) Procaine
- Causative agent of the Measles disease
a) Entamoeba histolytica b) Ascaris lumbricoidis
c) Varicella zoster d) Rubeola virus
- Cardiac muscle is a type of
a) Epithelial tissue b) Muscular tissue
c) Connective tissue d) Nervous tissue

MODEL QUESTIONS FOR B.Sc. (MATHEMATICS)**I. Mathematics (100 Questions of this type)**

- The integrating factor of $xdy - ydx = xy^2dx$ is

a) $\frac{1}{y^2}$ b) $\frac{1}{x^2}$ c) $\frac{x}{y}$ d) $\frac{y}{x^2}$

2. The equation of a line through two distinct points (x_1, y_1, z_1) and (x_2, y_2, z_2) is

a) $\frac{x-x_1}{x_2-x_1} = \frac{y-y_1}{y_2-y_1} = \frac{z-z_1}{z_2-z_1}$ b) $\frac{x_2-x_1}{x-x_1} = \frac{y_2-y_1}{y-y_1} = \frac{z_2-z_1}{z-z_1}$

c) $\frac{x-x_1}{x_2-x_1} = \frac{y-y_1}{y_2-y_1} = \frac{z-z_1}{z_2-z_1}$ d) $\frac{x+x_1}{x_2+x_1} = \frac{y+y_1}{y_2+y_1} = \frac{z+z_1}{z_2+z_1}$

3. Of $G = \{1, -1, c, -c\}$ then the order of a group.

- a) $O(G) = 4$
 b) $O(G) = 2$
 c) $O(G) = 1$
 d) $O(G) = 3$

II. Analytical Ability (50 Questions of this type)

1. In which year was Rahul born?

- I. Rahul at present is 25 years younger to his mother.
 II. Rahul's brother, who was born in 1964, is 35 years younger to his mother.

- (a). I alone is sufficient. (b) II alone is sufficient.
 (c) Both I and II are sufficient. (d) Neither I nor II is sufficient.

2. 8, 27, 64, 100, 125, 216, 343.

- (a) 27 (b) 100 (c) 125 (d) 234

3. If CERTAIN is coded as XVIGZRM, how can MUNDANE be coded.

- (a) MFMXZMV (b) NFMWZMX
 (c) NFMWZMV (d) VMZWVFN

4. Introducing a boy, a girl said "He is the son of the daughter of the father of my uncle"
 How is the boy related to the girl?

- (a) Brother (b) Nephew (c) Uncle (d) Son-in-law.

III. Communicative English (50 Questions of this type)

1. Choose the correct synonym of the word 'resound'

- a) Echo b) reflect
 c) Record d) open

2. Identify the error in the following sentence.

"Thank you so much for lending me your's notes"

- a) So much b) for lending c) your's d) Thank You

Answer the following question after reading the passage

"His originality consists in an early use of the stream-of-consciousness technique- a technique that depicts the flux of emotions and sensations passing through the consciousness of the character, without any":

3. Stream-of-consciousness technique deals with
- a) novelist's originality
 - b) consciousness of the character
 - c) flux of emotions and sensations
 - d) ordering and passing

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