ANNEXURE – III MODEL QUESTIONS FOR ENGINEERING

Mathematics (50 Questions of this type)

1. If 1,
$$\omega$$
, 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

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

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}

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)

Η

b) He

c) Li

d) Be

3. The pH of 0.001M NaOH is

1

a)

b) 3 c) 11

d) 14

4. Brass is an alloy of

> Cu +Sn a)

b) Cu + Zn c) Cu + Zn + Ni d) Fe + Cr + Ni

ENGINEERING PAPERS (100 Questions of this type) Civil Engineering 1. The maximum shear force for a simply supported beam carrying udl occurs at (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 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. b) 0^{0} a) 60^{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 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

Quality factor of a tuned circuit is
 (a) Product of BW and f resonant

 $\begin{array}{ll} \text{(b)} & BW/f_{resonant} \\ \text{(c)} & f_{resonant}/BW \\ \text{(d)} & 2 \ f_{resonant} \end{array}$

V. Computer Science and Engineering						
1. Which of the sets of LOGIC GATES are designated as UNIVERSAL GATES						
a) NOR, NAND b) XOR, NOR, NAND						
c) OR, NOT, AND d) NOR, NAND, XOR						
2. The complexity of Binary Search algorithm						
a) n b) $\operatorname{nlog}(n)$ c) $\operatorname{log}(n)$ d) n^2						
3. The postfix equivalence of the prefix *+ab-cd is						
a) ab+cd-* b) abcd+-* c) ab+cd*- d) ab+-cd*						
VI. Metallurgical Engineering						
1. Which of the following is the criterion for the phase transformation $\alpha \rightarrow \beta$ to take place?						
a) $\Delta G > 0$ b) $\Delta G < 0$ c) $\Delta S < 0$ d) G_{θ} - $G_{\alpha} = 0$						
α) 20 ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° °						
2. Which of the following is the hardest phase that appears in Fe- Fe ₃ C phase diagram?						
a) Cementite b) Martensite						
c) Ferrite d) Austenite						
3. Which of the following is not a strengthening mechanism?						
a) Strain hardening b) Annealing						
c) Cold working d) Precipitation hardening						
VII. Chemical Engineering						
1. Reynolds number is the ratio of						
a) Viscous forces to gravity forces b) Inertial forces to viscous forces						
c) Viscous forces to inertial forces d) Inertial forces to gravity forces						
2. The catalytic cracking of heavier petroleum fraction is done to produce mainly						
a) Gasoline b) Asphalt c) Diesel oil d) Tar						
c) Diesei on d) Tai						
3. Which of the following is a desirable characteristic of an instrument?						
a) High drift b) High fidelity						
c) High measuring lag d) Poor reproducibility						
VIII. Mining Engineering						
1. In fully mechanized Bord and Pillar mining system, extraction of coal and its transportation from working faces,						
commonly carried out with combination of						
A. continuous miner, shuttle car, feeder breaker and belt conveyor						
B. continuous miner, LHD, feeder breaker and Chain conveyor						
C. continuous miner, shuttle car, feeder breaker and Chain conveyor						
D. continuous miner, SDL, feeder breaker and belt conveyor						
2. In vertical shaft in over winding cage is prevented by						
A) Lilly controller B) Caliper brakes						
C) Detaching hook D) Keps						
3. The minimum quantity of air to be supplied in coal mines per person in m ³ /min						
As per CMR-1957						
A.2.5 B.4.5 C.5 D.6						

IX.	Electronics and Instrumentation	Engineering		
1. An n	-bit register requires no c a) 2n b) n+1	of flip flops. c) 2n	d) n	
2) LVD	T is used to measure par a) Temperature b) displacer		c) torque	d) density
3) The	p ^H of a solution is proportional to a) Log [H ⁺] b) -log [H ⁻]		d) 1/ log [$[\mathrm{H}^+]$
Х.	Bio - Technology			
translat	ch component of transcribed RNA in ion occurs a) Intron b) 3' poly A tail c) Ribosome binding site d) 5'cap ukaryotic chromosome is made up o a) DNA only		present in the ir	nitial transcript but is removed before
	b) Histones and nucleic acid c) Centromeres and centrioles d) DNA and RNA only			T. (200 11)
	MODEL QUES	TIONS FOR	RPHARMACY	(200 questions)
1. Hyp	otonic solution on injecting leads to		•.	
	a) Osmosisc) Crenulation	b) Haemolys d) Hydrotroj		
2. The t	cype of emulsion depends on a) Method used c) Emulsifying agent	b) Oil d) Trituratio	n	
3. An e	example of general anesthetic.			
	a) Diethyl etherc) Morphine	b) Acetoned) Procaine		
4. Caus	ative agent of the Measles disease a) Entamoeba histolytica c) Varicella zoster	b) Ascaris lu d) Rubeola v		
5. Card	iac muscle is a type of a) Epithelial tissue c) Connective tissue	b) Muscular d) Nervous t		

MODEL QUESTIONS FOR B.Sc. (MATHEMATICS)

I. Mathematics (100 Questions of this type)

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

(a). I alone is sufficient.(c) Both I and II are sufficient.		(b) II alone is sufficient.(d) Neither I nor II is sufficient.		
2. 8,	27, 64,100,125,21	16,343.		
	(a) 27	(b) 100	(c) 125	(d) 234
3. If C	CERTAIN is code	ed as XVIGZRM, ho	ow can MUNDAN	NE be coded.
	(a) MFMXZM (c) NFMWZM		FMWZMX MZWMFN	
	roducing a boy, a w is the boy relate		son of the daughte	er of the father of my uncle"
110.				
110,	(a)Brother	(b) Nephew	(c) Uncle	(d) Son-in-law.
		(b) Nephew ve English (50 Q	. ,	•
III. (Communication to the correct s	ve English (50 Q	uestions of this	•
III. (Communication to the correct so a) Echo	ve English (50 Q synonym of the wor b) reflect	uestions of this	•
III. (Communication to the correct s	ve English (50 Q	uestions of this	•
III. (1. Ch	Communicative noose the correct s a) Echo c) Record ntify the error in t	ve English (50 Q synonym of the wor b) reflect d) open the following senter	uestions of this to d'resound'	
III. (1. Ch	Communicative noose the correct s a) Echo c) Record ntify the error in t	we English (50 Q synonym of the wor b) reflect d) open	uestions of this to d'resound'	•
111. (1. Ch	Communicative a) Echo c) Record ntify the error in to "Thank you so a) So much	ve English (50 Q synonym of the wor b) reflect d) open the following senter o much for lending i	uestions of this to d 'resound' nce. me your's notes" c) your's	d) Thank You

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

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

I. Rahul at present is 25 years younger to his mother.

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

1. In which year was Rahul born?

II. Analytical Ability (50 Questions of this type)

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

2 0		
3. Str	tream-of-consciousness technique deals with a) novelist's originality b) consciousness of the character	
	a) novelist's originality	
	a) novense s originality	
	b) consciousness of the character	
	c) flux of emotions and sensations d) ordering and passing	
	c) mux of emotions and sensations	
	d) ordering and passing	
	6 1 1 6	