

## MODEL QUESTIONS FOR ENGINEERING

**Mathematics (50 Questions of this type)**

- The length of the latus-rectum of the ellipse represented by the equation  $25x^2 + 9y^2 = 225$  is a.  $50/3$  b.  $18/5$  c.  $18/25$  d.  $50/9$
- $1. =$   
a. 0 b. 1 c.  $5e$  d. 2

**Physics (25 Questions of this type)**

- If  $F = a + W$  where F is force, W is work done and a, b are constants, the dimensional formula for b is  
a)  $M^2L^4T^{-6}$  b)  $M^3L^5T^{-6}$  c)  $M^1L^5T^{-6}$  d)  $M^{-3}L^{-5}T^6$
- The resultant of two forces 3 N and 6 N is normal to the smaller force. The angle between the forces is —  
a)  $120^\circ$  b)  $135^\circ$  c)  $110^\circ$  d)  $30^\circ$
- A body is projected obliquely so that its maximum range is 80m. Its corresponding maximum height is —  
a) 20m b) 60m c) 40m d) 160m

**Chemistry (25 Questions of this type)**

- The normality of oxalic acid solution is found to be 0.05N. How many grams of oxalic acid is present in 100ml of solution.  
a) 1.26 b) 12.6 c) 126 d) 0.126
- Which of the following is responsible for temporary hardness of water  
a)  $CaCO_3$  b)  $CaCl_2$  c)  $CaSO_4$  d)  $Ca(HCO_3)_2$
- The monomer of Rubber is—  
a) Isoprene b) propene c) polyisoprene d) Bakelite

**ENGINEERING PAPERS (100 Questions of this type)****CHEMICAL ENGINEERING**

- Distillation is \_\_\_\_\_ operation.  
a) Liquid-Liquid b) Solid-Solid c) Liquid-Gas d) Liquid-Solid
- If the flow is laminar, then the value of Reynold's number is \_\_\_\_\_.  
a) 1000 b) 5000 c) 10000 d) 100000
- Fourier Law is connected with \_\_\_\_\_.  
a) Radiation b) Convection c) Conduction d) Leaching

**CIVIL ENGINEERING**

- What is the least count of ordinary vernier transit theodolite  
a. 10 seconds  
b. 15 seconds  
c. 20 seconds  
d. 30 seconds
- What is the relation between  $C_c$ ,  $C_v$  and  $C_d$ .  
a.  $C_d = C_c \times C_v$   
b.  $C_c = C_v \times C_d$   
c.  $C_v = C_c \times C_d$   
d.  $C_d = C_c / C_v$
- The number of bars for singly reinforced balanced section is 4. If the actual number of bars (same type and diameter) provided is 5, the nature of failure of the section is  
a. Tensile  
b. Compressive

- c. Torsional
- d. Shear.

### **COMPUTER ENGINEERING**

1. The usage of break statement in a switch statement is
  - a. Optional
  - b. Compulsory
  - c. for error checking
  - d. Not allowed
2. Which command is used to remove an index from the database in SQL
  - a. DELETE INDEX
  - b. DROP INDEX
  - c. REMOVE INDEX
  - d. ROLLBACK INDEX
3. Which of the following refers to associative memory
  - a. The address of the data is generated by CPU
  - b. The address of the data is supplied by users
  - c. The data is used as an address
  - d. The data accessed sequentially

### **ELECTRONICS AND COMMUNICATION ENGINEERING**

1. The device that can be used as Voltage regulator
  - a. Transistor
  - b. Zener diode
  - c. Tunnel diode
  - d. Varactor diode
2. Maximum power transfer takes place across a load in an AC network
  - a. Load impedance is the complex conjugate of the source impedance
  - b. Load resistance is equal to the source resistance
  - c. Load impedance is equal to the source impedance
  - d. Load impedance is square of source impedance

### **ELECTRICAL AND ELECTRONICS ENGINEERING**

1. The period during which the power to the traction motor is cut-off is known as
 

a )	C u t - o f f p e r i o d	c )	C o a s t i n g
b )	F r e e r u n n i n g	d )	B r a k i n g
2. The slow but continuous rotation of the energy meter even under no load is known as
 

a )	R o t a t i o n e r r o r	c )	c r e e p i n g e r r o r
b )	J u m p i n g e r r o r	d )	f r e e r u n e r r o r
3. Which of the following is known as Universal gate?
 

a )	A N D	c )	O R
b )	N A N D	d )	N O T

### **ELECTRONICS AND INSTRUMENTATION ENGINEERING**

1. Which of the following is the Bi-Directional flow meter?
 

a) Orifice	b) Venturi meter	c) Electromagnetic Flow meter	d) Pitot tube
------------	------------------	-------------------------------	---------------
2. Neutral Zone is equal to
 

a) $D e$	b) $D e/2$	c) $2D e$	d) $D^2 e$
----------	------------	-----------	------------
3. Mass spectroscopy deals with
 

a) Mass of ions	b) $m/e$ ratio of ions	c) charge of ions	d) nuclear charge
-----------------	------------------------	-------------------	-------------------

### **MECHANICAL ENGINEERING**

1. When the axis of first and last wheels are co-axis then the gear train is known as
  - a. Simple gear train

- b. Compound gear train
  - c. Reverted gear train
  - d. Epicyclical gear train
2. Heat transfer during constant pressure process =
    - a. Change in displacement work
    - b. Change in internal energy
    - c. Change in flow work
    - d. Sum of changes in internal energy and flow work
  3. The capacity of domestic refrigerator is in the range of...
    - a. 3 to 5 TR
    - b. 1 to 3 TR
    - c. 0.1 to 0.3 TR
    - d. 5 to 7 TR

### **METALLURGICAL ENGINEERING**

1. Raw material for production of Aluminium is \_\_\_\_\_
  - a) Bauxite
  - b) Cryolite
  - c) Alumina
  - d) Gibbsite
2. No of slip systems in FCC structure
  - a) A. 12
  - b) 48
  - c) 16
  - d) 03
3. ASTM grain size is measured by \_\_\_\_\_ formula
  - a)  $A N=2^{-n-1}$
  - b)  $n=2^{N-1}$
  - c)  $N=2^n-1$
  - d)  $n=2^N-1$

### **MINING ENGINEERING**

1. As per CMR the distance between two main outlets of underground coal is \_\_\_\_\_ meters
  - a) 13.5
  - b) 14.5
  - c) 15.5
  - d) 18
2. The reading taken when the vertical circle is left of the observer is called.
  - a) Face right reading
  - b) Face middle reading
  - c) Face left reading
  - d) Swinging

### **CERAMIC TECHNOLOGY**

1. The melting point of Silica is
  - (a). 1728
  - (b) 1825
  - (c). 1625
  - (d). 1560
2. The excess quantity of the this oxide in glass composition increases de-vitrification (a) Sodium Oxide (b) Titanium Oxide (C) Calcium Oxide (d) Arsenic Oxide
3. The blocks that are used as the bottom of a Glass Tank melting furnace are
  - (a). Fireclay
  - (b). Sillimanite
  - (c). Alumina
  - (d) Silicon Carbide

### **PHARMACY**

1. Which compound cannot used as an ANTACID
  - a)  $\text{NaHCO}_3$
  - b)  $\text{CaCO}_3$
  - c) Na I
  - d)  $\text{Al(OH)}_3$
2. Which compound is called as "Blue Vitriol"
  - a)  $\text{Na}_2\text{SO}_4$
  - b)  $\text{CuSO}_4$
  - c)  $\text{ZnSO}_4$
  - d)  $\text{H}_2\text{SO}_4$
3. Which of the following chemical constituent is not present in RAUWOLFIA

- Reserpine
- Serpentine
- Vinblastine
- Deserpine

## MODEL QUESTIONS FOR B.Sc. (Mathematics)

### 1. Mathematics (100 Questions of this type)

- The integrating factor of the linear differential equation  $(1+x^2) + 2xy - 4x^2 = 0$  is ( ) (a)  $1+x^2$  (b)  $1+x^{-2}$  (c)  $1-x^2$  (d)  $1-x^{-2}$
- The solution of  $x dy - y dx = xy^2 dx$  is ( ) (a)  $X^2 - xy = c$  (b)  $x-x^2y = c$  (c)  $x^2 - y = c$  (d)  $(x^2/2) + (x/y) = c$
- The integrating factor of  $x^2y dx - (x^3 + y^3) dy = 0$  is ( ) (a)  $y^2$  (b)  $-y^{-4}$  (c)  $-y^4$  (d)  $-y^{-3}$

### 2. ANALYTICAL ABILITY (50 Questions of this type)

#### I. Data Sufficiency

In questions 1-2 the choices are same as given below

- If the data I alone is sufficient to answer the question, then (1) is the correct answer.
- If the data II alone is sufficient to answer the question, then (2) is the correct answer.
- If the data I & II both are sufficient to answer the question, then (3) is the correct answer.
- If the data I & II both are not sufficient to answer the question, then (4) is the correct answer.

- How far is town A from Town C?

I: Town A is 160 kms from town B. II: Town B is 155 kms from town C

- If M and N are points on segment RS. What is the length of the segment MN? I: The length of segment RM is 10 II: The length of segment NS is 8

#### II.

##### a) Sequence and Series:

- RTV, OQS, LNP, IKM, \_\_\_\_\_  
 (1) FHJ (2) GIK  
 (3) GHJ (4) GIJ
- Find the missing term in the series 1,9,17,33,49,73, \_  
 (1) 97 (2) 98  
 (3) 99 (4) 100

##### b) Data Analysis:-

Note:- Answer questions 5 and 6 after reading the table

Food Items	Jan	Feb	March	April	May	June
Rice	250	230	210	260	240	220
Wheat	320	340	280	290	300	360
Sugar	240	210	200	210	160	150
Pulses	360	300	320	245	235	250
Vegetables	380	390	385	375	355	370
Misc.	460	485	440	460	475	480

- The quantity of sugar used in month of April is approximately what percent of the total of food items used in April.

- (1) 21% (2) 18%
- (3) 11% (4) 25%
6. What is the respective ratio of the total quantity of food items used in the month of March to the quantity of food items used in the month of April?
- (1) 366: 367 (2) 361: 365
- (3) 248:245 (4) 367:368
- c) Coding and Decoding Problems:**
7. If BELIEF is written as AFKKDI, then the code for SELDOM is
- (1) TFKENP (2) RFKFNK
- (3) RFKENN (4) RDKCNL
8. In a row of six persons D and C are immediate neighbors of E. B is a neighbor of A only. A is the forth from F who are on the two end points?
- (1) F,B (2) F,C
- (3) B,D (4) C,A

### Communicative English (50 Questions of this type)

Table showing the various components of language items tested with weight age of marks

Serial No.	Components	Sample
<b>1. GRAMMAR</b>	Articles	I want to buy..... <b>lap top</b>
	Prepositions	Will you please sit _____ me? a)beside b) by c) besides d) between
	Tenses	I _____ since morning. a)Am working b)was working c)worked d)have been working
	Active and Passive Voice	It _____ to hold a meeting in the office today. a) Is proposed b) proposed c) they proposed d) is proposing
	Concord	Each of the boys _____ for the game show. a) Were called b) was called c) were calling d) are call
	Question Tags	Farmers work on land to produce food for us, a) Isn't it? b) doesn't it? c) weren't they? d) don't
	<b>2. VOCABULARY</b>	Synonyms
Antonyms		Analyse a) Synthesise b) co ordinate c) organise d) concise
One word Substitutes		One who is recovering from illness
Affixes		...relevãnt
Homophones		_____ is today's newspaper. a) Hear b) her c) heir d) here
Words often confused		I invited everyone ____ Rahim to the party. a) Accept b) except c) exempt d) extinct

<b>3. ERROR ANALYSIS</b>	Spotting Errors (Includes all the components mentioned in this syllabus)	The father / along with his son were found /missing from the party/held at the a)                      b)                      c)                      d) Function hall.
	Sentence Improvement	a)I am being the Sunday b) It being a Sunday c) When being the Sunday d) On being a Sunday
<b>4. USAGE</b>	Idioms	The workers are <i>hell bent at getting</i> what is due to them. a) hell bent on getting b)hell bent for getting c)hell bent upongetting d) No improvement
	Phrasal verbs	
<b>5. READING COMPREHENSION</b>	Main idea Factual question Inferential Vocabulary	A passage of suitable level of difficulty may be given to test comprehension skills.
<b>6. REARRANGEMENT OF PARTS IN SENTENCES</b>	Jumbled parts of a sentence to be rearranged ( Tests understanding of relation between form and function)	tomorrow? / to come with us/ to have dinner /Would you like A            B            C            D a) acdb    b) cd ba    c) dcba    d) dbca
<b>7. FUNCTIONAL ENGLISH</b>	Requesting	A: May I leave the room now Madam?
	Complaining Seeking Permission Apologising Suggesting	B:Yes you may. a) Requesting    b) Seeking permission c) Apologising    d) Commanding