Contents

PART - I

General Information

1. The following B.Tech programmes are offered by Vignan University for the year 2012 - 2013:

   Automobile Engineering
   Biotechnology
   Chemical Engineering
   Civil Engineering
   Computer Science & Engineering (CSE)
   Electronics & Communications Engineering (ECE)
   Electrical & Electronics Engineering (EEE)
   Information Technology (IT)
   Mechanical Engineering
   Mechatronics
   Textile Technology
   Agricultural Engineering (Proposed)

2. Eligibility Criteria for Admission:

   - Admission to B.Tech programmes will be through a written Test V-SAT '12. (Vignan's Scholastic Aptitude Test . V-SAT is a written test to be conducted across the country).

   - Candidates born on or after 1st July ,1991 and a pass in Intermediate or its equivalent with minimum 60% aggregate marks are eligible to appear for the admission test.

   Note: Candidates appearing / appeared for Qualifying Examination and awaiting results can also apply.

3. Streams for V-SAT '12 :

   Candidates who attempt Physics, Chemistry, Mathematics and English in the V-SAT '12 are eligible for all the B.Tech programmes.

   Candidates who attempt Physics, Chemistry, Biology and English in the V-SAT '12 are eligible only for B.Tech. Biotechnology Programme.

4. Scholarships offered by Vignan University for Admission into B.Tech. Programmes for 2012-13:

   Full Fee Waiver for top 100 rankers, 50% fee waiver for 101 - 300 rankers and 25% fee waiver for 301 - 500 rankers of V-SAT '12 will be offered.

   Various merit scholarships will be offered to meritorious students in each branch, in subsequent years.

5. Admission Procedure :

   - The admission will be on the basis of the performance in the written test V-SAT '12 conducted by Vignan University.

   - The merit position of the candidate for admission will be based on the score obtained in V-SAT '12, provided if he/she gets minimum 60% aggregate marks in the qualifying examination as per the eligibility criteria. Admissions will be purely on merit and by following the reservation policy applicable to Vignan University.

   - A common merit list will be prepared based on the performance in the written test and they will be called for the counseling to be held at the Vignan University premises at Vadlamudi, Guntur District through a common ranking.

   - It is the responsibility of the candidates to ascertain whether they possess the requisite qualification for admission. Having been appeared for the written test or called for counseling does not necessarily mean acceptance of the eligibility/admission.

   - The admission offered to a candidate who has been provisionally admitted to a programme will stand cancelled if he/she does not submit the relevant documents in original pertaining to admission (such as Marks Statements, Transfer Certificate, Conduct Certificate etc.) to the Director-Admissions before the date stipulated in the admission offer.

   - Admissions to various programmes will, however, be subject to verification of facts from the original certificates/documents of the candidates. In case any discrepancy is noticed even at a later point of time after admission, the management reserves the right to cancel the admission and such a decision shall be final and binding on the candidate.

6. V-SAT '12 Written Test and Admission Schedule :

IMPORTANT DATES TO REMEMBER	
1. Sale of application forms :	17th Oct 2011 onwards
2. Last date for receipt of filled in applications :	7th April 2012
3. Test Date & Time :	22nd April 2012 : 10.00 A.M. to 1.00 P.M.
4. Publication of V-SAT'12 result :	15th May 2012
5. Counseling of merit listed candidates for admission :	1st to 10th June 2012 Venue : Vignan University, Vadlamudi, Guntur – 522 213 (A.P) Ph : +91 863 2118487, 88

Note : The changes in the above schedule, if any, due to unavoidable circumstances will be informed to the candidates.

7. V-SAT '12 Question Paper Pattern

4 The question paper will be in English and consists of 4 sections (Maths or Biology, Physics, Chemistry and English)

4 The questions are of multiple choice and objective type. Each question has 4 options. Choose the right option and mark it on the OMR sheet.

4 Each correct answer carries one mark.

4 There is no negative marking.

S.No	Details
1	Section I : Mathematics or Biology consists of 40 questions (40 Marks)
2	Section II : Physics consists of 30 questions (30 Marks)
3	Section III : Chemistry consists of 30 questions (30 Marks)
4	Section IV : English consists of 20 questions (20 Marks)
	Total 120 questions (120 Marks)

8. V-SAT '12 Rules

4 Candidates should report to the respective centre 30 minutes prior to the commencement of the test.

4 Candidates must bring their hall ticket with them.

Note :   Use of calculators, log tables and slide ruler, watches with facilities of calculator, pagers and cellular phones are strictly prohibited for the test. Candidates should not bring any material with them except the Hall Ticket, Pen, H.B. Pencil and eraser.

General Instructions

The test centre Co-ordinator is authorized to dismiss a candidate from the test for any of the following reasons:

4 Creating disturbance.

4 Attempting to take the test on behalf of someone else.

4 Talking to other test taker(s).

4 Use of calculators, slide rules, pagers, cell phones, concealed microphones, wireless devices or any other material that may aid in answering questions.

Timing & Breaks

4 The test is of 180 minutes duration.

4 No break is permitted during the test.

9. **Application Forms**

Issue: Application Forms will be issued from 17th Oct 2011 onwards. There are three modes of registration as under (for details visit our website www.vignanuniversity.org/admissions).

i. **Direct**

Candidates can obtain applications by post from the University Office on payment of Rs. 800/-(for boys), Rs. 600/- (for girls) through DD drawn in favour of Vignan University, payable at Guntur or in person from any of Vignan Schools or Colleges at Guntur, Hyderabad, Eluru, Rajahmundry, Visakhapatnam and Vignan office at Vijayawada.

ii. **Post Offices & Banks**

Application can also be obtained from selected Post Offices and branches of Axis Bank through out the State of Andhra Pradesh. (For details refer to the inside of back cover page of this booklet).

iii. **Download**

Application form can be downloaded from the university website : www.vignanuniversity.org/appl. The filled application alongwith the DD for Rs. 800/- (for boys), Rs. 600/- (for girls) drawn in favour of Vignan University, payable at Guntur should be sent to reach the address given below before the last date specified. Candidates should write their name and address on the reverse of DD.

The completed applications should be sent to the following address so as to reach before the last date specified :

Director- Admissions
Vignan University
Vadlamudi,Guntur - 522 213 (A.P)
Ph : +91 863 2118487, 88

Receipt of Application Forms

4   Last date for receipt of filled-in application at the University office is 7th April 2012.

4   Applications received after the due date will not be accepted.

4   Candidates are advised to retain a photo copy of the filled in application for future reference.

4   The University will not be responsible for any postal delay, loss in postal transit or any irregularity beyond the control of the University.

10. **Information at different stages**

Candidates will be informed about the status of the application as under :

Receipt of Application	Through e-mail (admissions@vignanuniversity.org) using the application number about 10 days after dispatching the application.
Hall Ticket	Mentioning Application Number and the test centre after processing the application.

11. **Test Centres for V-SAT '12**

V-SAT '12 will be held in various cities across the country. The list of test centres along with their corresponding codes is given under 'Instruction to fill up the Application Form'.

Important: The test centre, once allotted to the candidates, shall not be changed under any circumstances. While every effort will be made to allot test centre opted by the candidate, the university reserves the right to allot a centre other than that of the candidate's choice.

12. **Hall Ticket**

Important Information

4   The Hall Ticket will be issued only to those eligible candidates who have submitted their application forms complete in all respects, on or before the last date as specified.

4   The Hall Ticket will contain name, photograph, signature, address, address of the test centre allotted and test schedule.

4   Hall Tickets will be dispatched through certificate of posting/speed post.

4   The Hall Ticket once received should be carefully examined by the candidate. If any discrepancy is noticed, it should immediately be brought to the notice of the Director-Admissions, Vignan University.

4   The Hall Ticket can be downloaded from the website www.vignanuniversity.org one week prior to the test date.

- No candidate will be permitted to take the test without a valid Hall Ticket. The Hall Ticket should be presented to the invigilators for verification.

- Candidate must not tamper with the Hall Ticket or alter any entry made therein after it has been authenticated.

- The Hall Ticket is not transferable to any other person. Impersonation is a legally punishable offence.

- The Hall Ticket is an important document. It should be preserved and produced at the time of counseling and admission.

13. **Hall Ticket not received due to application being incomplete**

Vignan University does not take any responsibility to inform candidates who have sent an incomplete application. Candidates are advised to double check that the application form is complete in all respects before posting.

14. **Duplicate Hall Ticket**

In case a candidate fails to get a Hall Ticket 7 days before the scheduled date for V-SAT'12, he / she should report the same immediately to the Director-Admissions and if he/she does not receive the Hall Ticket before the examination date, he/she would have to meet the University Representative one day before the examination at the test centre with a photocopy of the application form, DD and two attested passport size photographs, identical to the one affixed in the application form. Enquiries pertaining to the Hall Ticket without mentioning application number will not be entertained under any circumstances.

15. **Counseling Procedure for Allocation of Seats / Branch**

- The date / time for counseling will be intimated to the candidates either by post or through SMS or E-Mail and will also be published in the university website : www.vignanuniversity.org /admissions.

- Change of date / time of counseling is generally not permissible. If a candidate fails to appear personally for counseling on the date and time specified, he/she will forfeit his candidature for the allotment of seat on that day. However, he / she is eligible to appear for subsequent counseling depending on the availability of seats.

- The candidates should produce the documents listed below in original along with one set of photocopies while reporting for counseling. Candidates will not be allowed to participate in the counseling process without these documents.

16. **Required Documents in Original during Counseling**

- Counseling call letter.
- V-SAT'12 Hall Ticket.
- V-SAT'12 Rank card.
- 10th class marks memo as proof of date of birth.
- Marks sheet of qualifying examination.
- Caste certificate (if applicable)

Candidates will be allowed to participate in the counseling process only after verification of the documents. Authentic records pertaining to identification, age, marks sheet of qualifying examination, and other eligibility criteria, will be checked. If a candidate fails to produce any of these documents, he/she will not be considered for counseling.

- The candidate will be offered a seat based on his / her rank in the merit list and availability of seats.

- After allotment of a seat in a branch and acceptance of the same by the candidate he / she will remit the prescribed tuition fee and admission fee either by cash or DD drawn in favour of Vignan University payable at Guntur.

17. **Submission of Documents on Admission**

The following documents in original are required to be submitted at the time of admission.

- V-SAT'12 Hall Ticket.
- V-SAT'12 Rank card.
- Provisional letter of admission offer.
- Qualifying examination mark sheets.
- 10th Class marks memo.
- Transfer Certificate / Migration Certificate.
- Caste Certificate (if applicable).
- Conduct Certificate.

All the above referred documents shall be handed over to the Admission Office on or before the date prescribed by the University, failing which provisional admission accorded will stand cancelled.

18. Discontinuance / Withdrawal from the Programme

A candidate who desires to leave the institution after joining the programme will have to submit a NO DUES certificate issued by the competent authorities. This should be accompanied by the application for withdrawal and the original fee receipt.

The original certificates will be returned only on production of NO DUES certificate in the prescribed form, obtained from the Administrative Office.

19. General Discipline

All candidates admitted to the university shall follow code of conduct, pay the requisite tuition and hostel fee and other charges by the due dates, attend their classes regularly and abide by the rules and regulations of the university. If at any point of time, the conduct of a candidate is not satisfactory or is of a suspicious nature, the management reserves the right, to make him / her vacate the hostel or expel him / her from the university without assigning any reason thereof.

RAGGING IN ANY FORM IS FORBIDDEN. IF ANY ONE IS INVOLVED IN RAGGING HE/SHE CAN BE RUSTICATED FROM THE UNIVERSITY.

Note : Vignan University reserves the right to alter any date or activity schedule announced or add, alter or delete information contained under various headings owing to administrative / operational reasons. The university also reserves the right to alter any of the terms of admission with due notice to the candidates.

20. Fee structure for the Academic year 2012 -13

For Category 'A' - through V-SAT'12.

For Category 'B' - open for candidates who have at least 60% aggregate in Intermediate or equivalent.

BRANCH	CATEGORY – A		CATEGORY - B	
	Admission Fee (Non refundable) (1st year)	Tuition Fee (Per year)	Admission Fee (Non refundable) (1st year)	Tuition Fee (Per year)
ECE	Rs.10,000/-	Rs. 95,000/-	Rs. 20,000/-	Rs. 1,85,000/-
EEE				
CSE				
MECHANICAL Engg.				
CIVIL Engg.				
INFORMATION TECHNOLOGY	Rs. 10,000/-	Rs. 95,000/-	Rs. 10,000/-	Rs. 95,000/-
MECHATRONICS				
AUTOMOBILE Engg.				
AGRICULTURAL Engg. (Proposed)				
BIOTECHNOLOGY*	Rs. 10,000/-	Rs. 45,000/-	Rs. 10,000/-	Rs. 45,000/-
CHEMICAL Engg.				
TEXTILE TECHNOLOGY				

* BiPC candidates are also eligible for admission into B.Tech Biotechnology programme.

Hostel Fee

Rs. 60,000/- + Rs. 5,000/- (Registration Fee) for A/C rooms & Rs. 55,000/- + Rs. 5,000/- (Registration Fee) for Non A/C rooms.

Study Loans

The admitted candidates are eligible to apply for a study loan towards tuition fee, hostel fee, transport and purchase of books in all Nationalised Banks including UCO bank situated on campus at Vadlamudi.

For more information contact UCO Bank, Vadlamudi, (Ph : 0863 - 2118495).

PART - II

Instructions to fill up the Application Form

General Instructions

- 4 Read the following instructions carefully before filling in the application form. Requests for corrections will not be entertained later. Refer to the specimen copy enclosed in this brochure.

- 4 The application form should be filled by the candidate in his/her own handwriting. Candidates should send only the original application form and may retain a xerox copy.

- 4 The application form will be machine-processed. Hence take utmost care in writing with black ballpoint pen in the boxes wherever provided.

- 4 Do not scribble, cut, tear or erase the application form. Do not put any stray marks anywhere on the application form.

- 4 The photograph, signature and address of the applicant are to be machine-scanned. So paste a recent colour photograph of good quality with light colour background. Sign in the prescribed place using only a black ballpoint pen.

- 4 Note that your name, your parent's / guardian's name and your date of birth should be exactly the same as given in your 10th Class marks memo / Higher Secondary School examination certificate.

- 4 The application must be complete in all respects. An incomplete application or application filled in a language other than English will be rejected.

- 4 Candidates are advised to retain with them a photocopy of the filled-in application for future reference and quote the application number in all correspondence.

Instructions for Filling the Application Form (for downloaded applications)

i. Carefully read the V-SAT '12 Instruction Guide before you proceed to fill the form.

ii. Read and understand all the instructions and eligibility criteria for admission before proceeding to fill the form.

iii. You are advised to take a print out of these instructions so that you can refer to the same while filling the form.

iv. Once you confirm the data entered, you will not be allowed to change the same.

v. After downloading the form, you should take two copies of the printout. Once you take the printout of the form, affix your photograph, fill the application form, sign and attach the Demand Draft for Rs. 800/- (for boys), Rs. 600/- (for girls) drawn in favour of "Vignan University" payable at Guntur and send one copy of the same by registered post /speed post to the following address. You should keep the second copy with you for your reference.

Director - Admissions
Vignan University
Vadlamudi, Guntur - 522 213
Ph. No. : +91 863 2118487, 88

Item wise Instructions for Filling the Application Form

1. NAME OF THE APPLICANT - Write your name in CAPITAL LETTERS as it appears in your 10th class marks memo. Leave one blank box between adjacent words. Do not use any prefixes like Mr., Mrs., Miss/Ms. etc.
   For example : Mr. CHENNAMA PRASADA RAO should be written as

| C | H | E | N | N | A | M | A | | P | R | A | S | A | D | A | | R | A | O | | |

2. DATE OF BIRTH - Enter the date, month and year of your birth as recorded in 10th class marks memo in DD/MM/YY format only. When the number or date or month is a single digit, zero should be prefixed.

   For example : 17th April 1994 will be entered as

1	7	0	4	9	4
DATE		MONTH		YEAR	

3.　SEX - Tick Mark the appropriate box only.

☑ MALE　　☐ FEMALE

4.　COURSE CHOICE (B.TECH)CODE

Biotechnology	31
Chemical Engineering	32
Civil Engineering	33
Computer Science & Engineering (CSE)	34
Electronics & Communications Engineering (ECE)	35
Electrical & Electronics Engineering (EEE)	36
Information Technology (IT)	37
Mechanical Engineering	38
Mechatronics	39
Automobile Engineering	40
Textile Technology	41
Agricultural Engineering (Proposed)	42

3	3		3	5		3	8

CHOICE 1　　CHOICE 2　　CHOICE 3

5.　TESTCENTRE - Refer to the table given below for test centre codes. You can give any two choices as per priority. You may be alloted any one of them.

For example, an applicant with Hyderabad as the first choice and Bengaluru as the second choice should write as :

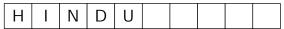| 1	2		0	5

CHOICE 1　　CHOICE 2

TEST CENTRE CODES

TEST CENTRE	CODE		TEST CENTRE	CODE		TEST CENTRE	CODE		TEST CENTRE	CODE
ANANTAPUR	01		ELURU	10		KURNOOL	19		SAMBALPUR	28
ASANSOL	02		GUNTUR	11		LUCKNOW	20			
BEGUSARAI	03		HYDERABAD	12		NAGPUR	21			
BELLARI	04		ITANAGAR	13		NIZAMABAD	22			
BENGALURU	05		JABALPUR	14		ONGOLE	23			
BHOPAL	06		JAMSHEDPUR	15		PATNA	24			
BHUBANESHWAR	07		KAKINADA	16		RAIPUR	25			
CHENNAI	08		KHAMMAM	17		RAJAHMUNDRY	26			
DISPUR	09		KOLKATA	18		RANCHI	27			

6. RELIGION : Write the religion

| H | I | N | D | U | | | | |

7. CATEGORY : Tick Mark the appropriate box only.

| | | | | ✔ |
| BC | SC | ST | PH | Others |

8. NAME OF THE PARENT / GUARDIAN : Write the name of your parent or guardian.

For example : Mr. CH. GOVINDA RAO

| C | H | | G | O | V | I | N | D | A | | R | A | O | |

9. ADDRESS FOR CORRESPONDENCE - Write the complete postal address including PIN CODE to which communications are to be sent. Also write the telephone number with STD code and e-mail address if any.

For example the address is :

    PLOT NO. 38, PHASE III
    MAHATMA GANDHI MARG
    PARADISE CIRCLE
    HYDERABAD
    ADDRESS FOR CORRESPONDENCE (DO NOT REPEAT NAME)

DOOR / HOUSE No.

| P | L | O | T | | N | O | | 3 | 8 | | P | H | A | S | E | | I | I | I | | |

STREET NAME

| M | A | H | A | T | M | A | | G | A | N | D | H | I | | M | A | R | G | | |

LOCALITY / MANDAL

| P | A | R | A | D | I | S | E | | C | I | R | C | L | E | | | | | | |

TOWN / CITY

| H | Y | D | E | R | A | B | A | D | | | | | | | | | | | | |

DISTRICT

| H | Y | D | E | R | A | B | A | D | | |

STATE

| 0 | 2 |

PINCODE

| 5 | 0 | 0 | 1 | 0 | 4 |

STD CODE

| 0 | 4 | 0 | | |

TELEPHONE NUMBER

| 2 | 5 | 3 | 4 | 5 | 4 | 6 | |

MOBILE NUMBER

| 9 | 9 | 0 | 0 | 3 | 3 | 4 | 4 | 5 | 5 |

EMAIL ID

| P | A | R | S | U | · | C | H | E | N | N | A | @ | G | M | A | I | L | · | C | O | M |

*STATE Refer to the table given below for state codes

STATE NAME	STATE CODE	STATE NAME	STATE CODE
ANDAMAN & NICOBAR (U.T)	01	LAKSHADWEEP (U.T)	19
ANDHRA PRADESH	02	MADHYA PRADESH	20
ARUNACHAL PRADESH	03	MAHARASHTRA	21
ASSAM	04	MANIPUR	22
BIHAR	05	MEGHALAYA	23
CHANDIGARH (U.T)	06	MIZORAM	24
CHHATTISGARH	07	NAGALAND	25
DADRA & NAGAR HAVELI (U.T)	08	ORISSA	26
DAMAN & DIU (U.T)	09	PONDICHERRY (U.T)	27
DELHI	10	PUNJAB	28
GOA	11	RAJASTHAN	29
GUJARAT	12	SIKKIM	30
HARYANA	13	TAMIL NADU	31
HIMACHAL PRADESH	14	TRIPURA	32
JAMMU & KASHMIR	15	UTTAR PRADESH	33
JHARKHAND	16	UTTARANCHAL	34
KARNATAKA	17	WEST BENGAL	35
KERALA	18	INTERNATIONAL	36

10.   PHOTOGRAPH - Paste your recent passport size colour photograph (not older than three months) at appropriate place. Do not staple or pin the photograph.

11.   SIGNATURE OF APPLICANT - Sign at the given place.

12.   DETAILS OF CLASS X - Write the Year, Board and State from where you have passed class X.

13.   X CLASS EXAMINATION DETAILS - Write maximum marks, marks obtained and percentage for all subjects put together.

14.   DETAILS OF INTERMEDIATE OR EQUIVALENT - Write the group, college and campus last attended, place, year of pass, Board and State from where you have passed or appeared for Intermediate or equivalent examination.

15.   SUBJECT WISE MARKS - INTERMEDIATE EXAMINATION OR EQUIVALENT - Tick the group in the box provided and write the name of the subject, Maximum marks, Marks obtained and the percentage. Also write the total maximum marks, total marks obtained and the percentage for all subjects put together. If the final result is not declared at the time of filling this application form, enter the Jr. Inter /11th class marks.

16.   APPLICATION FEE DETAILS: Application can be obtained either by paying cash or submission of DD.

DEMAND DRAFT: DD Amount Rs. 800/- (for boys), Rs. 600/- (for girls) drawn in favour of Vignan University, payable at Guntur.

Write the DD number, date, amount, issuing bank & branch name .   Also write your full name   and address on the reverse of the DD.

17.   DECLARATION - Candidate and the Parent / Guardian must sign with date the declaration to authenticate the information provided by them. Unsigned applications will not be accepted.

ENVELOPE ADDRESSED TO:
Director-Admissions
Vignan University
Vadlamudi, Guntur - 522 213 (A.P)
Ph : +91 863 2118487, 88

PART - III

Syllabus and Model Questions

for V-SAT 2012

Section-1 : Mathematics

Unit 1: Algebra

Sets, relations and functions

Sets and their representation, union, intersection of two sets and complement of a set and their algebraic properties, power set, Relation-types of relations, equivalence relation, Functions-types of functions, one-one and onto functions, composition of functions, inverse functions, algebra of real valued functions

Quadratic equations and expressions

Quadratic equations in real and complex number system and their solutions , relation between roots and coefficients, nature of roots, formation of quadratic equations with given roots, maximum and minimum values of quadratic expressions, quadratic inequations in one variable

Matrices, determinants and linear equations

Types of matrices, algebra of matrices; transpose of a matrix, determinants of matrices of order 2 and 3; properties of determinants, evaluation of determinants, adjoint and inverse of a square matrix, solution of simultaneous linear equations in two and three unknowns using determinants and matrices, consistency and inconsistency of simultaneous linear equations, Rank of a matrix

Permutations and combinations

Fundamental principle of counting, permutation as an arrangement and combination as a selection, linear and circular permutations, permutations when repetition of object is allowed, combinations

Binomial theorem and partial fractions

Binomial theorem for a positive integral index, general term, middle term (s), greatest term, properties of binomial coefficients, binomial theorem for rational index, partial fractions

Sequences and series

Arithmetic, geometric and harmonic progressions, insertion of arithmetic, geometric and harmonic means between two numbers, arithmetico-geometric progression

Unit 2: Trigonometry

Trigonometric Functions

(1) Trigonometric ratios of compound angles, multiple and sub-multiple angles, transformations and identities, extreme values, periodicity (2) Trigonometric equations, (3) Inverse trigonometric functions (4) Hyperbolic and inverse hyperbolic functions (5) Properties of triangle, (6) Heights and distances (in two dimensional plane) (7) Complex numbers : complex number as an ordered pair of real numbers, representation of complex numbers in the form $a+ib$ and their representation in a plane, Argand diagram, algebra of complex numbers, modulus and argument (or amplitude) of a complex number, square root of a complex number, triangle inequality, De-moivres theorem and its applications, expansions of trigonometric functions

Unit 3: Vector Algebra

Vectors and scalars, addition of vectors, linear combination of vectors, linear dependence and independence, components of a vector in two and three dimensions, vector equations of a line and a plane, scalar and vector products of two vectors and their applications, scalar and vector triple products, scalar and vector products of four vectors

Unit 4: Probability

Random experiment, sample space, event, probability of an event, addition theorem of probability; conditional event, conditional probability, multiplication theorem of probability, Bayes theorem

Probability distribution of a random variable, mean and variance of a random variable, Binomial and Poisson distributions

Unit 5: Coordinate Geometry

Coordinate system in two dimensions, locus and its equation, translation and rotation of axes

Straight Line

Various forms of equation of straight line, intersection of lines, angle between two lines, condition for concurrence of three lines, distance of a point from a line, equations of internal and external bisectors of angles between two lines, centroid, circumcentre, in-centre and orthocenter of triangle, equation of family of lines passing through the point of intersection of two lines

Pair of straight lines

Combined equation of a pair of lines passing through the origin, angular bisectors, condition for general equation of second degree in x and y to represent a pair of lines, angle between a pair of lines

Circle

Standard form of equation of a circle, general form of the equation of a circle and its parametric representation, equation of a circle when the end points of a diameter are given, points of intersection of a line and a circle, equation of tangent, normal, chord of contact, pole and polar, pair of tangents from an external point

System of circles

Angle between two circles, common tangents to two circles, orthogonality, radical axis, radical centre, coaxial system of circles, orthogonal system to a coaxial system of circles

Conic sections

Sections of cones, equations of conic sections (parabola, ellipse and hyperbola) in standard forms, condition for $y = mx + c$ to be a tangent, normal, equation of chord of contact, polar with respect to a conic

Unit 6: Calculus

Limits and continuity

Left limit, right limit and existence of limit of a function, continuity of a function

Differentiation and differentiability

Differentiability of a function, differentiation of the sum, product and quotient of two functions, Rolles and Lagranges mean value theorems

Applications of derivatives

Monotonic increasing and decreasing functions, maxima and minima of functions of one variable, tangents and normals

Integration

Integral as anti-derivative, integrals involving standard functions, methods of integration, integration by parts, reduction formulae

Definite integrals

Evaluation of definite integrals, properties of definite integrals

Areas

Areas of the regions formed by simple curves in standard form

Differential equations

Ordinary differential equations, their order and degree, formation of differential equations, solutions of differential equations by the method of variables separable, solution of homogeneous, non-homogeneous and linear differential equations of first degree

Section-II : Physics

Unit 1: Units & Dimensions and Measurement

Units for fundamental and derived quantities, system of units, rules for writing units, multiple and submultiples units in S.I system, Accuracy and precision, errors, types of errors - random errors, gross errors, systematic errors, absolute errors, mean absolute error, relative error, percentage error, errors due to addition, subtraction, multiplication, division and powers of observed quantities, dimensions of physical quantities, dimensional formulae, applications and limitations of dimensional analysis

Vectors

Scalars and vectors, types of vectors - equal, null and unit vectors, position vector, parallelogram law of vectors - applications, Triangle of law of vectors - applications, expression for resultant vector, polygon law of vectors, concept of relative velocity - application to relative motion of a boat in a river, multiplication of vector with scalar scalar product with examples, vector product with examples

Rotatory Motion

Basic concepts - angular displacement, angular velocity, angular acceleration, centripetal and centrifugal force - applications, motion of a body in a vertical circle, concept of Torque and couple, Angular momentum, moment of Inertia - parallel and perpendicular axes theorems, M. I. of a thin rod, uniform disc, rectangular lamina, solid sphere, hollow sphere, circular ring, solid cylinder, hollow cylinder, law of conservation of angular momentum with examples

Gravitation

Universal law of gravitation, nature of gravity, relation between g and G, variation of acceleration due to gravity with altitude, depth, latitude and shape of the earth - black holes - inertial and non - inertial frames inertial and gravitational masses - escape velocity - orbital velocity - geostationary satellites and their uses

Unit 2: Kinematics

Motion in a straight line, uniform motion, uniformly accelerated motion using position - time, velocity - time graphs, and relations for uniformly accelerated motion - concept of acceleration due to gravity equations of motion of freely falling body - vertically projected bodies from ground and tower - projectiles oblique projection, horizontal projection from top of a tower - applications

Laws of motion (Dynamics)

Force and Inertia, Newtons first law of motion; momentum, Newtons second law of motion; Impulse, apparent weight, Newtons third law of motion; law of conservation of linear momentum and its applications, At woods machine, objects suspended by strings, blocks placed in contact with each other on frictionless horizontal surface

Work, Power and Energy

Definitions and units of work - power - energy - expressions for P.E. & K.E., work - energy theorem, law of conservation of energy examples

Collisions

Collisions in one dimension - elastic and inelastic collision, coefficient of restitution, equation for height attained by freely falling body after a number of rebounds on the floor

Centre of mass

Definition of centre of mass - examples - centre of gravity - co-ordinates of centre of mass, characteristics, centre of mass of rigid body with homogeneous distributions of mass - thin rod, circular ring, disc, sphere

Friction

Types of friction - static, kinetic and rolling - causes of friction - methods to reduce friction - motion of a body on the rough horizontal surface - pushing and pulling of lawn roller - acceleration, velocity of a body sliding on smooth and rough inclined planes

Unit 3: Elasticity

Stress - strain Hook's law - modulii of elasticity (Y, n, K) poisson's ratio - behaviour of a wire under increasing load, elastic fatigue, strain energy, Searls experiment

Surface Tension

Surface tension - definition - examples, molecular theory - force due to surface tension - applications, surface energy, work done in splitting the liquid drop - applications, angle of contact, capillarity - example, experimental determination of surface tension by capillary rise method, excess pressure inside a liquid drop and soap bubble applications

Fluid mechanics and viscosity

Principle of buoyancy - pressure energy in a fluid, equation of continuity and Bernoullis theorem - application to aerodynamic lift and motion of spinning ball, steam line flow - turbulent flows - characteristics of stream line flow - turbulent flow - Poisuilles equation - Stokes formula - terminal velocity

Unit 4: Simple Harmonic Motion

Definitions and examples - displacement, velocity, acceleration, time period, frequency - time period of simple pendulum, spring pendulum, force constant, K.E. and P.E. of a body in SHM

Wave motion and Sound waves

Types of waves; longitudinal and transverse, progressive wave and its equation, stationary wave and its equation, principle of superposition of waves, reflection of waves, formation of stationary waves in stretched strings, laws of vibrating strings, sonometer, characteristics of sound, speed of sound in solids, liquids and gases, free and forced vibrations, resonance, standing waves in organ pipes - closed and open pipes (harmonics and overtones), Beats - definition and applications - Doppler effect - expressions for apparent frequency of sound in different cases - applications and limitation of Doppler effect - Echoes - absorption of sound waves - reverberation time - fundamentals of building acoustics - Sabines formula applications

Unit 5: Ray Optics

Theories of light - Refraction of light at plane surface - prism - R.I. of - prism - critical angle - total internal reflection - application optical fibre - Lens makers formula - applications, lens theory, defects in images-spherical and chromatic aberrations and methods of their reduction - optical instruments - simple and compound microscopes - astronomical and terrestrial telescopes - Ramsdens eyepiece - Huygens eye piece, - kinds of spectra - emission, line, band and continuous spectra - absorption spectra - applications, fraunhoffer lines and their significance

Physical Optics

Interference of light - coherent sources - conditions for interference, Youngs double slit experiment - fringe width - diffraction different classes of diffraction - Fresnels and Fraunhofers diffraction - application - polarization - production of plane polarized light by reflection and refraction - double refraction Polaroids

Unit 6: Magnetism

Coulombs inverse square law, magnetic field, magnetic lines of force, uniform and non - uniform magnetic fields couple acting on a bar magnet, magnetic moment - Bon axial and equatorial lines - Tangent law - deflection magnetometer - comparison of magnetic moments in Tan A and Tan B, position in equal distance and null methods - verification of inverse square law vibration magnetometer - experimental determination of M and B_H - dia, para and ferromagnetic materials, properties and uses

Electrostatics

Electric charge - properties, coulombs inverse square law - principle of superposition with examples - concept of electric - field electric lines of force and their properties - electric intensity - Intensity due to isolated charge and due to multiple charges - electrostatic potential, definition-potential due to point charge and group of charges - relation between V and E, electrostatic potential energy, electric flux, Gauss law-Applications of Gauss law to find electric intensity and potential due to continuous charge distribution of infinite wire and infinite plane sheet and spherical shell - capacitance - dielectric constant - condenser-definition and its uses - parallel plate condenser - effect of dielectric on capacitance of capacitors, capacitors in series and parallel, energy stored in a capacitor - types of capacitors - their uses

Current Electricity

Electriccurrent - drift velocity - mobility, Ohms lawandapplications,resistance,conductance,specificresistance, specific conductance, variation of resistance and resistivity with temperature - thermostat - effective resistance in different cases, EMF of a cell electrical energy - electrical power and their units - Kirchoffs laws application to Wheatstone bridge - condition for balancing - metre bride - potentiometer applications.

Unit 7: Thermoelectricity

Thermo emf - cause - explanation of Seebecks effect, Peltier effect, Thomson effect, their coefficients - variation of thermo emf with temperature - Neutral and inversion temperature - applications of thermocouples

Electromagnetics

Oersteds experiment, different laws to determine the direction of magnetic field - Biot-Savarts law - Amperes law - magnetic field near a long straight conductor, circular coil - tangent galvanometer, force on a moving charge and current carrying conductor in a magnetic field - force between two straight and parallel conductors, Flemings left hand rule - working of moving coil galvanometer - conversion of MCG into ammeter and voltmeter -electromagnetic induction - Faradays law, - Flemings right hand rule - self inductance - mutual inductance - transformer - growth and decay of charge in C - R circuit connected to dc source - growth and decay of current in L - R circuit connected to dc source - time constant in C - R , L - R circuits significance

Alternating currents - Instantaneous, peak mean and rms values of alternating current and alternating voltage applied to pure resistor, pure inductor, L - R, C - R and LCR circuits

Unit 8: Atomic Physics

Discovery of electron - specific charge of the electron by J.J. Thomsons method - Millikans oil drop experiment, photoelectric effect -laws of photoelectric effect - Einsteins photo electric equation - Millikans experimental verification of PEE, photo electric cells, X - rays, X - ray spectra, continuous and characteristic x - ray spectra, comopton effect, de Broglies hypothesis - matter waves

Nuclear Physics

Nucleus and its composition, mass defect, binding energy, binding energy curve, natural radio activity α, β, γ rays - properties, radioactive decay law, half life and average life, nuclear forces and their properties discovery of Neutron, radio isotopes and uses, artificial transmutation, nuclear fission, chain reaction, nuclear reactor, nuclear fusion - energy of sun and stars (carbon - nitrogen cycle, proton - proton cycle), classification of fundamental particles

Semiconductor Devices

Intrinsic & extrinsic semi conductors, p - type, n - type, P - N junction, junction diode, forward bias, reverse bias, current - voltage characteristics - rectifiers - Half wave and full wave rectifiers - zener diode as voltage regulator, transistor - PNP, NPN transistors and their working, V - I characteristics of transistor in CE configuration, Transistor as amplifier, logic (OR, AND, NOT, NAND, NOR)

Communication Systems

Elements of communication system (block diagrams), band width of signals (speech, TV and digital data) - propagation of electromagnetic waves in the atmosphere, sky and space wave propagation modulation

Unit 9: Temperature and thermal expansion of Solids, Liquids and Gases

Thermal expansion of materials using potential energy curve (only qualitative treatment), coefficient of linear (α), area (β) and volume (r) expansions, the coefficients of real (r_r) and apparent (r_a) expansion of liquid, variation of density of solids and liquids with temperature, specific gravity bottle method for the determination of , anamalous expansion of water and its significance in nature, volume and pressure coefficients of gases-their relationship - Regnaults apparatus - Boyels law, Charles law - ideal gas equation - universal gas constant significance

Thermodynamics

Heat - definition - calorie, thermal capacity, specific heat, latent heat - calorimetry - determination of specific heat and latent heat by method of mixtures - Joules law - first law and second law of thermodynamics, heat engine - refrigerator, phases of matter - triple point of water - specific heats of gases Cp, Cv and their relationship - Isothermal and adiabatic processes - relationships between P, V and T in adiabatic process - external work done by ideal gas in adiabatic, isothermal processes

Transmission of heat

Conduction - coefficient of thermal conductivity - convection - free and forced convection - thermal radiation -properties, provosts theory of heat exchange - emissive and absorptive power of bodies - black body radiation - kirchoffs law and its applications - Stefans law - Newtons law of cooling

Section-III : Chemistry

Unit 1: Stoichiometry

Law of chemical combination, Atomic and molecular masses mole concept, molar mass, percentage composition, empirical and molecular formulae, Chemical equations and Stoichiometry. Electronic concepts of oxidation and reduction, redox reactions, oxidation number, rules for assigning oxidation number, balancing of redox reactions

Unit 2: Gaseous State

Measurable properties of gases, Gas laws - Boyles law, Charles law, Grahams law of diffusion, Avogadros law. Daltons law of partial pressure, Concept of absolute scale of temperature, Ideal gas equation, Kinetic theory of gases (only postulates), Concept of average, root mean square and most probable velocities, Real gases, deviation from Ideal behavior, compressibility factor, van der Waals equation , liquefaction of gases, critical constants

Unit 3: Solid State

Classification of solids: molecular, Ionic covalent and metallic solids, amorphous and crystalline solids (elementary ideas), Braggs Law and its applications, Unit cell and lattices, packing in solids (fcc, bcc and hcp lattices), structures of NaCl, CsCl, ZnS, CaF_2 type crystal systems, voids, calculations involving unit cell parameters, imperfection in solids, Electrical, magnetic and dielectric properties

Unit 4: Atomic Structures

Discovery of sub-atomic particles (electron, proton and neutron), Thomson and Rutherford atomic models and their limitations, Nature of electromagnetic radiation, photoelectric effect, Spectrum of hydrogen atom, Bohr model of hydrogen atom - its postulates, derivation of the relations for energy of the electron and radii of the different orbits, limitations of Bohrs model, Dual nature of matter, de-Broglies relationship, Heisenberg uncertainty principle. Elementary ideas of quantum mechanics, quantum mechanical model of atom, its important features, and concept of atomic orbitals as one electron wave functions, Variation of and with radius for 1s and 2s orbitals, various quantum numbers (principal, angular momentum and magnetic quantum numbers) and their significance , shapes of s, p and d - orbitals, electron spin and spin quantum number, Rules for filling electrons in orbitals - aufbau principle, Paulis exclusion principle and Hands rule, electronic configuration of elements extra stability of half-filled and completely filled orbitals

Unit 5: Chemical Bonding and Molecular Structure

Kossel -Lewis approach to chemical bond formation, concept of ionic and covalent bonds

Ionic bonding: Formation of ionic bonds, factors affecting the formation of ionic bonds, calculation of lattice enthalpy

Covalent Bonding: Concept of electro negativity, Fajans rule, dipolemoment, Valence Shell Electron Pair Repulsion (VSEPR) theory and shapes of simple molecules

Quantum mechanical approach to covalent bonding: Valence bond theory - Its important features, concept of hybridization involving s, p and d orbitals, Resonance

Molecular Orbital Theory - Its important features, LCAOs, types of molecular orbitals (bonding, antibonding), sigma and pi-bonds molecular orbital electronic configurations of homonuclear diatomic molecules, concept of bond order, bond length and bond energy

Elementary idea of metallic bonding. Hydrogen bonding and its applications

Unit 6: Chemical Thermodynamics

Fundamentals of thermodynamics: System and surroundings, Extensive and intensive properties, state functions, types of processes First law of thermodynamics - Concept of work, heat internal energy and enthalpy, heat capacity, molar heat capacity: Hesss law of constant heat summation, Enthalpies of bond dissociation, combustion, formation, atomization, sublimation, phase transition, hydration, Ionization and solution

Second law of thermodynamics: Spontaneity of processes, S of the universe and G of the system as criteria for spontanity, G^0 (Standard Gibbs energy change) and equilibrium constant

Unit 7: Solutions

Different methods for expressing concentration of solution - molality, molarity, mole fraction percentage (by volume and mass both), vapour pressure of solutions and Raoults Law- Ideal and non-ideal solutions, vapour pressure - composition plots for ideal and non-ideal solutions, Colligative properties of dilute solutions - relative lowering of vapour pressure, depression of freezing - point, elevation of boiling point and osmotic pressure, Determination of molecular mass using colligative properties, Abnormal value of molar mass, Vant Hoff factor and its significance

Unit 8: Equilibrium

Meaning of equilibrium, concept of dynamic equilibrium

Equilibria involving physical processes: Solid - liquid - gas and solid - gas equilibria. Henrys law, general characteristics of equilibrium involving physical processes

Equilibria involving chemical processes: Law of chemical equilibrium, equilibrium constant (Kp and Kc) and their significance, significance of G and Go in chemical equilibrium, factors affecting equilibrium concentration, pressure, temperature, effect of catalyst; Le Chateliers principle

Unit 9: Acids & Bases

Weak and strong electrolytes, ionization of electrolytes, various concepts of acids and bases (Arrhenius, Bronsted - Lowry and Lewis) and their ionization, acid-base equilibrium (including multistage ionization) and ionization constant, ionization of water, pH scale, common ion effect hydrolysis of salts and pH of their solutions, solubility of sparingly soluble salts and solubility products, buffer solutions

Unit 10: Electrochemistry

Electronic concepts of oxidation and reduction, redox reactions, oxidation number, rules for assigning oxidation number, balancing of redox reactions

Electrolytic and metallic conduction, conductance in electrolytic solutions, specific and molar conductivities and their variation with concentration: Kohlrauschs law and its applications

Electrochemical cells - Electrolytic and Galvanic cells, different types of electrodes, electrode potentials including standard electrode potential, half-cell and cell reactions, emf of a Galvanic cell and its measurement, Nernst equation and its applications, Relationship between cell potential and Gibbs energy change, Dry cell and lead accumulator, Fuel cells, Corrosion and its prevention

Unit 11: Chemical Kinetics

Rate of a chemical reaction, factors affecting the rate of reactions : concentration, temperature, pressure and catalyst, elementary and complex reaction, order and molecularity of reactions, rate law, rate constant and its units, differential and integral forms of zero and first order reactions, their characteristics and half-lives, effect of temperature on rate of reactions - Arrhenius theory , activation energy and its calculation, collision theory of bimolecular gaseous reactions (no derivation)

Unit 12: Surface Chemistry

Adsorption - Physisorption and chemisorption and their characteristics, factors affecting adsorption of gases in solids Freundlich and Langmuir adsorption isotherms, adsorption form solutions

Colloidal state - distinction among true solutions, colloids and suspensions, classification of colloids - lyophilic, lyophobic, multi molecular, macromolecular and associated colloids (micelles), preparation and properties of colloids - Tyndall effect, Brownian movement, electrophoresis, dialysis, coagulation and flocculation, Emulsions and their characteristics

Unit 13: Classification of Elements and Periodicity in Properties

Modern periodic law and present form of the periodic table, s, p, d and t block elements, periodic trends in properties of elements atomic and ionic radii, Ionization enthalpy, electron gain enthalpy, valence, oxidation states and chemical reactivity

Unit 14: Metallurgy

Modes of occurrence of elements in nature, minerals, ores, Steps involved in the extraction of metals - concentration, reduction (chemical and electrolytic methods) and refining with special reference to the extraction of Al, Cu, Zn, Pb, Ag, Hg and Fe, Thermodynamic and electrochemical principles involved in the extraction of metals

Unit 15: Hydrogen and its Compounds

Position of hydrogen in periodic table, isotopes, preparation, properties and uses of hydrogen, Physical and chemical properties of water and heavy water, Structure, preparation, reactions and uses of hydrogen peroxide, Classification of hydrides - Ionic, covalent and interstitial, Hydrogen as a fuel

Unit 16: Alkali and Alkaline Earth Metals

Group 1 and Group 2 Elements

General introduction, electronic configuration and general trends in physical and chemical properties of elements, anomalous properties of the first element of each group, diagonal relationships

Preparation and properties of some important compounds Sodium carbonate, sodium chloride , sodium hydroxide and sodium hydrogen carbonate, Industrial uses of lime, limestone, Plaster of Paris and cement , Biological significance of Na , K , Kg and Ca

Unit 17: P- Blocks Elements

Group 13 to Group 18 Elements

General Introduction: Electronic configuration and general trends in physical and chemical properties of elements across the periods and down the groups, unique behavior of the first element in each group

Group wise study of the P-block elements

Group 13

Preparation, properties and uses of boron and aluminium, Structure, properties and uses of borax, boric acid, diborane, boron trifluoride, aluminium chloride and alums

Group 14

Tendency for catenation, Structure, properties and uses of allotropes and oxides of carbon, silicon tetrachloride, silicates, zeolites and silicones

Group 15

Properties and uses of nitrogen and phosphorus, Allotropic forms of phosphorus, Preparation, properties, structure and uses of ammonia, nitric acid, phosphine and phosphorus halides. (PCl_3, PCl_5), Structures of oxides and oxoacids of nitrogen and phosphorus, super phosphate of lime

Group 16

Preparation, properties, structures and uses of dioxygen and ozone, Allotropic forms of sulphur, Preparation, properties, structures and uses of sulphur dioxide, sulphuric acid (including its industrial preparation)., Structures of oxoacids of sulphur, preparation, properties and uses of sodium thiosulphate

Group 17

Preparation, properties and uses of chlorine, flourine and hydrochloric acid, Trends in the acidic nature of hydrogen halides, Structures of interhalogen compounds and oxides and oxoacids of halogens, preparation and properties of bleaching powder

Group 18

Occurrence and uses of noble gases: Isolation and separation of noble gases. Structures of fluorides and oxides of xenon

Unit 18: D- and F - Block Elements and Coordination Compounds

Transition Elements

General introduction, electronic configuration, occurrence and characteristics, general trends in properties of the first row transition elements - physical properties, ionization enthalpy, oxidation states, atomic radii, colour, catalytic behaviour, magnetic properties, complex formation, interstitial compounds, alloy formation, Preparation, properties and uses of $K_2Cr_2O_7$ and $KMnO_4$

Inner Transition Elements

Lanthanoids - Electronic configuration, oxidation states, chemical reactivity and lanthanoid contraction

Actinoids - Electronic configuration and oxidation states

Coordination Compounds

Introduction to co-ordination compounds, Werners theory, ligands, co-ordination number, denticity, chelation, IUPAC nomenculature of mononuclear co-ordination compounds isomerism, Bonding - Valence bond approach and basic ideas of Crystal field theory, colour and magnetic properties, Importance of coordination compounds (in qualitative analysis, extraction of metals and in biological systems)

Unit 19: Environmental Chemistry

Environmental pollution - Atmospheric, water and soil

Atmospheric pollution - Tropospheric and Stratospheric

Tropospheric pollutants - Gaseous pollutants: Oxides of carbon, nitrogen and sulphur, hydrocarbons, their sources, harmful effects and prevention, Green house effect and Global warming, Acid rain

Particulate pollutants: Smoke, dust, smog, fumes, mist, their sources, harmful effects and prevention

Stratospheric pollution - Formation and breakdown of ozone, depletion of ozone layer- its mechanism and effects

Water pollution - Major pollutants such as, pathogens, organic wastes and chemical pollutants, Fluoride pollution their harmful effects and prevention

Soil pollution - Major pollutants such as, Pesticides (insecticides, Herbicides and fungicides), their harmful effects and prevention. Strategies to control environmental pollution

Unit 20: Purification and characterization of organic compounds

Purification - Crystallization, sublimation, distillation, differential extraction and chromatography - principles and their applications

Qualitative analysis - Detection of nitrogen, sulphur, phosphorous and halogens

Quantitative analysis (basic principles only) - Estimation of carbon, hydrogen, nitrogen, halogens, sulphur, phosphorus Calculations of empirical formulae and molecular formulae; Numerical problems in organic quantitative analysis

Unit 21: Some basic principles of organic chemistry

Tetravalency of carbon, shapes of simple molecules - hybridization (s and p), Classification of organic compounds based on functional groups: - C = C -, - C C - and those containing halogens, oxygen, nitrogen and sulphur, Homologous series, Isomerism - structural and stereoisomerism

Nomenclature (Trivial and IUPAC)

Covalent bond fission - Hemolytic and heterolysis: free radicals, carbonations and carbanions, stability of carbonations and free radicals, electrophiles and nucleophiles

Electronic displacement in a covalent bond - Inductive effect, electromeric effect, resonance and hyper conjugation

Common types of organic reactions - Substitution, addition, elimination and rearrangement

Unit 22: Hydrocarbons

Classification, isomerism, IUPAC nomenclature, general methods of preparation, properties and reactions

Alkanes - Conformations: Sawhorse and Newman projections (of ethane), Mechanism of halogenations of alkanes

Alkenes - Geometrical isomerism, Mechanism of electrophilic addition of hydrogen, halogens, water, hydrogen halides (Markownikoffs and peroxide effect), Ozonolysis, oxidation, and polymerization

Alkynes - Acidic character, addition of hydrogen, halogens, water and hydrogen halides, Polymerization

Aromatic hydrocarbons-Nomenclature, benzene - structure and aromaticity, Mechanism of electrophilic substitution, halogenation, nitration, Friedel - Crafts alkylation and acylation, directive influence of functional group in mono-substituted benzene

Unit 23: Alkyl and aryl halides

General methods of preparation, properties and reactions, Nature of C-X bond, Mechanisms of substitution reactions. Preparation and properties of chloroform

Uses; Environmental effects of chloroform, Iodoform, freons and DDT

Unit 24: Alcohols and phenols

General methods of preparation, properties, reactions and uses

Alcohols, Phenols and Ethers

Alcohols: Identification of primary, secondary and tertiary alcohols, mechanism of dehydration

Phenols: Acidic nature electrophilic substitution reactions: halogenation, nitration and sulphonation, Reimer - Tiemann reaction

Unit 25: Ethers

Ethers: Structure, Nomenclature of ethers. Preparation and properties of diethyl ether uses of diethyl ether

Unit 26: Carbonyl Compounds

Aldehyde and Ketones: Nature of carbonyl group, Nucleophilic addition to $C=O$ group, relative reactivity of aldehydes and ketones, important reactions such as Nucleophilic addition reaction (addition HCN, NH_3 and its derivatives), Grignard reagent, oxidation, reduction (Wolff Kishner and Clemensen), acidity of - hydrogen, aldol condensation, Cannizzaro reaction, Halo form reaction, Chemical tests to distinguish between aldehydes and Ketones.

Unit 27: Carboxylic Acids

Structure and Nomenclature of carboxylic acids. Preparation and properties of carboxylic acids. Acidic strength and factors affecting it.

Unit 28: Nitrogen Compounds

General methods of preparation, properties, reactions and uses.

Nitrobenzene

Amines: Nomenclature, classification, structure, basic character and identification of primary, secondary and tertiary amines and their basic character.

Diazonium Salts: Importance in synthetic organic chemistry.

Unit 29: Polymers

General introduction and classification of polymers, general methods of polymerization- addition and condensation, copolymerization, Natural and synthetic rubber and vulcanization, some important polymers with emphasis on their monomers and uses polythene, nylon, polyester and bakelite.

Unit 30: Biomolecules

General introduction and importance of biomolecules.

Carbohydrates - Classification, aldoses and ketoses, monosaccharides (glucose and fructose), constituent monosaccharides of oligosaccharides (sucrose, lactose, maltose) and polysaccharides (starch, cellulose, glycogen).

Proteins: Elementary Idea of - amino acids, peptide bond polypeptide, proteins, primary, secondary, tertiary and quarternary structure (qualitative idea only), denaturation of proteins, enzymes.

Vitamins - Classification and functions.

Nucleic Acids - Chemical constitution of DNA and RNA, Primary structure of DNA, Replication of DNA, Transcription and protein synthesis, Heredity (genetic code)

Hormones - Classification and structural features, General biological functions of animal hormones.

Lipids - Classification, Structure and function in bio-systems

Unit 31: Chemistry in every day life

Chemical in medicines - Analgesics, tranquilizers, antiseptics, disinfectants, antimicrobials, antifertility drugs, antibiotics, antacids, antihistamines - their meaning and common examples.

Chemical in food - Preservatives, artificial sweetening agents - common examples

Cleansing agents - Soaps and detergents, cleansing action.

Section-I : Biology (Botany)

Unit 1: Introduction

1) Origin, development and scope of Botany 2) Classification of plant kingdom (outlines only) 3) Branches of Botany: Morphology, Cytology, Embryology, Palynology, Taxonomy, Physiology, Ecology, Palaeobotany, Genetics, Phytogeography, Phycology, Mycology, Lichenology, Bryology, Pteridology, Microbiology, Bacteriology, Virology. 4) Parts of angiospermic plant

Unit 2: External Morphology

Vegetative Morphology

1) Root: root systems, types, characteristics and functions, Modifications of roots (storage roots, Velamen roots, Photosynthetic roots, Respiratory roots, Nodular roots and Parasitic roots) 2) Stem: Characteristics and functions of the stem; modifications of stems: Aerial: Tendrils, Thorns, Hooks Phylloclade, Tuberous stems and Bulbils. Sub-Aerial; Runners, Stolons, Suckers & Offsets, Underground: Rhizome, Corm, Stem tuber & Bulb. 3) Leaf: Parts of Leaf, venation, types of leaves, Phyllotaxy, Leaf modifications: - Tendrils Spines, Scale leaves, Phyllode, Reproductive & Trap leaves (Details of Nepenthes only).

Reproductive Morphology

4) Inflorescence: Types of Inflorescence: a) Terminal, axillary and intercalary, b) Racemose, Cymose and Speical Types. 5) Flower: Parts of flower, Structure of flower, Sex distribution, Symmetry of flower, Position of gynoecium on the thalamus. Detailed description of flower, Perianth, Calyx, Corolla, aestivation, Androecium Parts, fixation, lengths of stamens, union of stamens, dehiscence of anther, Gynoecium number of carpels, fusion of carpels, ovary number of locules, placentation, Types of styles, Stigma.

Unit 3: Reproduction in Angiosperms

1) Introduction - Sporophytic and Gametophytic stages. 2) Structure of Anther; Microsporogenesis and development of male gametophyte. 3) Ovule - Structure and Types; megasporogenesis - development and structure embryo sac 4) Pollination: Types of pollination - self and cross pollination, advantages of cross pollination, contrivances for cross pollination and self pollination, agents of cross pollination, agents cross pollination 5) Fertilization - Process, Post - fertilization changes; Seed structure (Dicot & Monocot) and types of seed germination (epigeal, hypogeal & vivipary) 6) Fruits: classification; false fruits and true fruits - simple fruits (fleshy fruits - berry, pome, pepo hesperidium, drupe; Dry fruits - dehiscent-legume, septicidal capsule, loculicidal capsule, septifragal capsule, Indehiscent fruits - caryopsis, cypsela, nut: schizocarpic - lomentum, schizocarp), Aggregate and Multiple fruits

Unit 4: Plant Taxonomy

1) Introduction - alpha and omega taxonomy; Aspects of taxonomy - Identification - Flora, herbaria, botanical gardens (RBG - Kew, IBG - kolkata, NBG - Lucknow), Nomenclature, ICBN, Classification - Types, Units and Brief account of Bentham & Hooker's system. Study of the following families including economic importance 2) Malvaceae 3) Fabaceae 4) Solanaceae 5) Liliaceae

Unit 5: Cell Biology

1) Introduction, Techniques of Cell Biology - microscopy (light, electron, fluorescent, phase contrast, SEM, TEM - only uses) 2) Ultrastructure of plant cell (Eukaryotic cell - Structure of cell all and cell membrane, Protoplasm, Cytoplasm, Plastids, Mitochondria, Endoplasmic reticulum, Ribosomes, Golgi complex, Lysosomes, Peroxisomes and Glyoxysomes, Vacuoles and Nucleus) 3) Chromosomes 4) Nucleic acids. 5) Cell Cycle: Mitosis and Meiosis

Unit 6: Internal organization of plants

1) Tissues - Structure, types (Meristematic and Permanent) and functions. 2) Internal structure of Dicot root (Primary) and Monocot root. 3) Internal structure of Dicot stem (Primary) and Monocot stem. 4) Internal structure of leaf (Dicot and Monocot) 5) Secondary growth in dicot stem.

Unit 7: Plant Ecology

1) Introduction 2) Plant communities - Hydrophytes, Mesophytes and Xerophytes; Ecological adaptations (Morphological & Anatomical) of Hydrophytes and Xerophytes

Unit 8: Genetics

1) Introduction 2) Mendels Principles - Monohybrid cross, Dihybrid cross, Back cross, Test cross, Concept of probability in

relation to Mendels laws. 3) Linkage and crossing over (only concept and significance) 4) Mutations - Types of Mutations and significance

Unit 9: Plant Kingdom

1) Introduction 2) Spirogyra - Distribution and habitat, thallus structure, cell structure, reproduction - vegetative, asexual, sexual, life cycle 3) Rhizopus - Distribution and habitat, structure mycelium and hypha, reproduction - vegetative, asexual, sexual, life cycle, sexuality in Rhizopus. 4) Funaria: Distribution and habitat, external morphology of the gametophore, anatomy of the stem, reproduction - vegetative and sexual, sporophyte, protonema, life cycle. 5) Pteris: Distribution and habitat, external morphology of the sporophyte, anatomy of the rhizome (stem), vegetative, asexual and sexual reproduction, life cycle. 6) Cycas: Distribution and habitat, Morphology of the sporophyte, anatomy of the the coralloid root and leaflet, Reproduction, life cycle.

Unit 10: Microbiology

1) Introduction and importance of microbiology 2) Bacteria - Discovery, Distribution, sizes, shapes, Gram stain (in brief), structure of cell, nutrition, reproduction - asexual (binary fission), sexual - conjugation (F and F only), transformation and transduction (only definition, discoverer and example for transformation and transduction), economic importance - beneficial (Agriculture, industry, Medicine, Biotechnology), harmful (Spoilage of food, plants, human and animal diseases). 3) Viruses - Historical account, types, structure (TMV and T details), general account of sizes, shapes, replication, plant diseases caused by viruses, transmission viruses and control measures of viral diseases.

Unit 11: Plant Physiology

1) Introduction

Water Relations of Plants

2) Absorption of water - Introduction, soil water, water potential, diffusion, Imbibition, osmosis, plasmolysis, absorption of water. 3) Ascent of Sap: Definition, Cohesion - Tension theory. 4) Transpiration: Definition and types of transpiration, mechanism of stomatal movement, factors, significance, anti transpirants.

Nutrition in plants

5) Introduction, types of nutrition (symbiosis, parasitism, chemotrophism, autotrophism) 6) Mineral nutrition - Introduction, soil as source, criteria of essentiality, importance of macro and micro elements, ion absorption - passive and active (carrier concept), biofertilizers.

Metabolism

7) Enzymes - introduction, prosperities, IUB classification, mechanism of enzyme action (lack & key theory), enzyme inhibition. 8) Photosynthesis - Definition, pigments, structural organization of chloroplast: light reaction-Hills reaction, Emerson enhancement effect, PSI and PSII, electron transport and proton translocation, photophosphotylation: C_3, C_4 Pathways, Factors, photorespiration Blackmans law. 9) Respiration - definition, Types, Mechanism of aerobic (Glycolysis, Krebs cycle, oxidative decarboxylation of pyruvic acid & electron transport system - oxidative phosphorylation) and anaerobic respiration, Respiratory quotient (RQ). 10) Nitrogen metabolism: Nitrogen cycle, Biological nitrogen fixation (symbiotic, non - symbiotic), Genetic code, Protein synthesis. 11) Plant growth & its regulators: Growth curve: introduction to growth regulators: physiological effects of auxins, gibberellins, cytokinins, abscisic acid and ethylene and their applications in agriculture and horticulture: Photoperiodism and Vernalization.

Unit 12: Plants and Human Welfare

1) Crop improvement - Introduction, aim and objectives of plant breeding; methods - definition, methodology, advantages and achievements of introduction, selection (Mass, pure-line, clonal), hybridization (Heterosis - only concept): mutation breeding and polyploidy breeding.

Biotechnology

2) Introduction, definition, scope, and applications of Biotechnology 3) Genetic Engineering - Recombinant DNA Technology, gene cloning; transgenic plants; GM crops, biosafety issues, applications of Genetic Engineering 4) Tissue Culture - Techniques and applications 5) Single cell protein Advantages and source of single cell protein 6) Mushroom Cultivation: Morphology and types of mushrooms; food value, cultivation of white button mushroom.

Section-I : Biology (Zoology)

Unit 1: Zoology - The Basics

Nature and scope of Zoology: meaning of zoology 2) Relation between zoology and other science 3) Basic principles of classification

(i) Need for classification

(ii) Nomenclature

(iii) Level of classification

(iv) Concept of species

Unit 2: Locomotion and Reproduction Protozoa

1) Types of structure of locomotory organelles - Pseudopodia, Cilia and Flagella giving examples. 2) Amoeboid movement (Pseudopodia movement - sol-gel theory only) 3) Ciliary and Flagellar movements - Synchronal and Metachronal movements (example: Paramoecium), Effective stroke and Recovery stroke (Example: Euglena) 4) Types of Reproduction:

(i) Asexual reproduction and methods - Binary fission (transverse and longitudinal in Paramoecium and Euglena respectively)

(ii) Sexual reproduction - conjugation as exemplified by Vorticella and its significance.

Unit 3: Animal Organisation

1) Multicellularity: Diploblastic and Triploblastic condition 2) Symmetry - Types and characteristic features of each symmetry, giving on example for each type from the representative phyla - Asymmetry, Radial symmetry, Biradial symmetry and Bilateral symmetry 3) Coelom:

i) Definition of Acoelom, Pseudo-coelom and Eucoelom - examples from the representative phyla.

ii) Formation of Eucoelom - Schizocoelic and Enterocoelic coelom

4) Animal Tissues: (brief account only)

(i) Epitheliat tissue types

(ii) Connective tissue - connective tissue proper, skeletal tissue - types, fluid tissue - Blood, Lymph.

(iii) Muscular Tissue types

(iv) Nervous Tissue

Unit 4: Phylum Annelida

1) Pheritima posthuma: Type study in detail

2) Different species, Habit and Habitat, External characters, structure and arrangement of setae, body wall, Coelom, wall of alimentary canal, locomotion, Digestive system, Respiratory system, Excretory system, Nervous system, Receptor organs, Blood vescular system, Blood glands, Reproductive system, Copulation, cocoon formation, development, regeneration and Economic importance.

Unit 5: Phylum Arthropoda

1) Cockroach - Periplaneta Americana - external characters, digestive, respiratory, nervous systems and sense organs only.

2) Insect mouth parts of the following types:

    2.1) Biting and chewing Eg: cockroach

    2.2) Piercing and sucking Eg: Mosquito

    2.3) Sponging and sucking Eg: Housefly

    2.4) Siphoning Eg: Butterfly

3) Economic importance of insects:

    3.1) Useful insects, viz., Honey bee, Lac insect, Silk worm - their produce and general features

    3.2) Harmful insects, viz., Bed bug, Head Louse, mosquito and housefly - their general features, harmful effects and diseases spread by them.

Unit 6: Animal Associations

1) Definition and 1 or 2 examples of the following associations:

    1.1Symbiosis: Commensalism, Mutualism, Parasitism 1.2) Predation

2) Structure, Life cycle, Pathogenesis and prophylaxis of the following parasites:

    2.1) Entamoeba histolytica 2.2) Plasmodium vivax 2.3) Taenia sodium 2.4) Wuchereria bancrofti

Unit 7: General Characters and Classification of Invertebrate Phyla upto The Level of Classes with Examples.

1) Phylum: Protozoa 2) Phylum: Porifera, Systematic position 3) Phylum: Coelenterata (Cnidaria) 4) Phylum: Platyhelminthes 5) Phylum: Nemathelminthes 6) Phylum: Annelida 7) Phylum: Arthropoda 8) Phylum: Mollusca 9) Phylum: Echinodermata

Unit 8: Man and Biosphere

1) Components of environment - atmosphere, hydrosphere and lithosphere 2) Hierarchy among the living organisms (definitions - population, community, biome, biosphere) 3) Structural components of an ecosystem: Abiotic factors - Light, temperature and water - their biological effect on organisms. Biotic factors - producers, consumers and decomposers 4) Functional aspects of ecosystem - Energy flow, Food chains, Food web, Ecological pyramids 5) Lake as an example of fresh water ecosystem - Littoral zone, Limnetic zone, and profundal zone 6) Population Ecology Population density, growth, age distribution and population regulation 7) Biodiversity and its conservation 8) Wild life and its conservation

Unit 9: Phylum Chordata

1) General characters, ancestry and theories of origin and outline classification of chordata upto classes with typical examples.

2) Sub-phylum vertebrata

2.1) Pisces: Distinctive features of placodermi, chondrichthyes & osteichthyes with typical examples, classification of chondrichthyes (upto subclasses) and osteichthyes (upto orders) 2.2) Amphibia: Distinctive features of Urodela, Anura, Apoda with typical examples 2.3) Reptilia: Distinctive features of squamata, Rhynchocephalia, Crocodelia and Chelonia with typical examples. Identification of poisonous and non-poisonous snakes, poisonous apparatus, toxicity of snake venom and treatment of snake bite including first aid 2.4) Aves: Distinctive features of Archeaeornithes & Neornithes (upto super orders only) with typical examples 2.5) Mammalia: Distinctive features of prototheria, Metatheria and Eutheria with typical examples.

Unit 10: Functional Anatomy of Rabbit: External Characters, Digestive, respiratory and circulatory systems.

1) Digestive system: Alimentary canal, Digestive glands, Process of Digestion, Role of vitamins and Minerals in nutrition 2) Respiratory system - Structure, mechanism of breathing and transport of respiratory gases 3) Circulatory system of Rabbit: Structure of heart, Arterial and venous system, Working of the heart, Coagulation of blood

Unit 11: Functional Anatomy of Rabbit - Excretory, Musculo - skeletal, Reproductive systems, Nervous and Endocrine systems

1) Excretory system: Excretory organs, Structure and function of Nephron, Urine formation and its composition: Micturition 2) Musculo-skeletal system: Ultra structure, mechanism of muscle contraction (sliding filament theory), Elementary approach of axial and appendicular skeleton of Rabbit, Types of joints. 3) Reproductive system: Anatomy of male and female reproductive systems, Fertilization, Development upto gastrulation, extra-embryonic membranes, Placenta, gestation. 4) Nervous system: Central, peripheral and autonomic nervous system. Structure of neuron, Production and propagation of nerve impulse, synaptic transmission 5) Endocrine system - Chemical messengers, hormones and mechanism of their action. Endocrine glands (Pituitary, Pancreas, Thyroid, Para-thyroid, Adrenal, Gastrointestinal, Pineal gland, Thymus, Ovary, Testis and Placenta). Endocrine disorders in human beings(pituitary thyroid, para thyroid, adrenal, pancreatic islet) 6) Immunology: Types of Immunity, organs of Immune system, cells of Immune system, soluble mediators of Immunity, Antigens, Mechanism of humoral and cell mediated immunities, Immunological disorders (AIDS, Hepatitis and Hypersensitivity)

Unit 12: Genetics

1) Multiple alleles: A, B, O Blood groups, Rh Antigens, their significance in transfusion and pregnancy 2) Sex determination: Sex chromosomes xx-xo, zo-zz, xx-xy, zz-zw methods, Genic balance theory, sex determination and sexual differentiation in human beings (Turners syndrome, klinefelter syndrome, Barr bodies), Halpo-diploidy in Honeybees, Hormonal control of sex, effect of environment on sex determation. 3) Sex-linked inheritance: Sex linkage in Drosophila, Genes on the sex chromosomes, sex

linked characters in human beings, xy-linked characters, sex-limited and sex-influenced inheritance. 4) Gene expression and regulation: Genetic material, Functions of the gene, Gene regulation in prokaryotes (lac operon concept only), Gene expression in eukaryotes, concept only), Gene expression in eukaryotes, concepts of gene action (one gene one polypeptide concept only). 5) Basic concepts of animal breeding: system of breeding, Heterosis and progeny test, cloning and transgenic animals. 6) Human Genetic Applications: Human genome project, Gene mapping, DNA finger printing, an elementary idea of gene therapy.

Unit 13: Organic Evolution

1) Evolutionary concepts, Origin of life and Experimental verification of chemical origin of life 2) Theories of organic evolution - Lamarckism, Darwinism, Sexual selection, Artificial selection, Mutation theory, Synthetic theory - Hardy Weinberg Equilibrium, Evolutionary forces (Natural selection, genetic drift, gene flow, genetic load, change in mutation rate), Speciation.

Unit 14: Applied Zoology

1) Aqua culture

1.1) Types of Fishery 1.2) Important organisms of Aquaculture 1.3) Organisations Concerned with aquaculture in India 1.4) Nutritional and Commercial values of aquatic organisms 1.5) Craft and Gear 1.6) Fish culture and rearing methods.

2) Poultry

2.1) Poultry-in general 2.2) Poultry farming methods, Layers and Broilers 2.3) Poultry diseases (Bacterial, viral and fungal)

3) Biotechnology

3.1) Recombinant DNA technology 3.2) Industrial use of microorganisms and Recombinant DNA technology - Vaccines, Enzymes, Hormones, Interferons, Monoclonal Antibodies, Alcohols, Acids, Vitamins, Antibiotics, Pollution control 3.2) Cell Cycle regulation - cancer biology (types and characters of tumours; stages, types and causative agents of cancer) 3.3) Stem cells. Biomedical technology: Xray - radiography, CAT scan, MRI, ECG and EEG, Transplantation, ELISA

Section-IV : English

Unit 1: Grammar and Usage

1) Degrees of comparison (Comparison of adjectives and transformation of sentences)
2) Transformations (Transformations of sentences among Simple, Compound and Complex sentences)
3) Agreement / Concord (Agreement between subject and verb)
4) Time and Tense (Suitable verb forms based on the time of the action)
5) Voice (Transformation of sentences from the Active voice to Passive voice and vice-versa)
6) Modals and Adjectives (Usage of modal auxiliaries and adjectives)
7) Determiners (Usage of determiners / articles)
8) Prepositions (Simple, compound and following prepositions)
9) Question tags (Tag questions for confirmation)
10) Phrasal verbs (Prepositional phrases, noun phrases, adverb phrases and adjective phrases)
11) Correction of sentences (Concepts based on the usage of nouns, verb forms, prepositions, determiners and adjectives)

Unit 2: Vocabulary

1) Synonyms and Antonyms
2) Odd Words (Finding the odd word basing on the concept)
3) One word substitution (One word substitutes for a long expression)
4) Spellings and Jumbled Letters (Correcting mis-spelt words and jumbled letters of a spelling)
5) Contextual meaning (Finding the meaning of the underlined words basing on the context)
6) Reasoning - Analogy and Linkers
7) Phonetics - Find the odd sound, Phonetic Transcription and Homophones

Mathematics Sample Questions

1. $\lim\limits_{n \to \infty} \left(\dfrac{1}{1.2} + \dfrac{1}{2.3} + \dfrac{1}{3.4} + \ldots\ldots + \dfrac{1}{n(1+1)} \right) =$

    A)   0

    B)   1

    C)   1

    D)   2

    Answer : B

2. If the percentage error in the volume of a sphere is 5, then the percentage error in the radius of the sphere is

    A)   4/9

    B)   2/5

    C)   5/3

    D)   ½

    Answer : C

3. The function $f(x) = \tan x - x$

    A)   Always decreases

    B)   Always increases

    C)   Sometimes increase and sometimes decrease

    D)   Never decreases

    Answer : B

4. $\dfrac{\lim}{x \to 0} \dfrac{9^x + 9^{-x} - 2}{x^2}$ is

    A) $\log 9$

    B) $(\log 3)^2$

    C) $(\log 9)^2$

    D) $\log 1$

    Answer : C

5. $\int_0^1 \tan^{-1} \left(\dfrac{2x-1}{1+x-x^2} \right) dx =$

    A) 0

    B) 1

    C) 2

    D) $\dfrac{\pi}{4}$

    Answer : A

Physics Sample Questions

1. Escape velocity on the surface of the earth is 11 km/s. If a body on the surface of the earth is given a velocity equal to 11 km/s in horizontal direction, the body will:

   A) Not escape and will return back to the earth, traveling along parabolic path

   B) Escape away from the earth traveling along parabolic path

   C) Escape away from the earth traveling along straight line path

   D) Orbit along elliptical path around the earth

   Answer : B

2. A SHM has time period of one second. Its differential equation is

   A) $\dfrac{d^2x}{dt^2} + x = 0$

   B) $\dfrac{d^2x}{dt^2} + 2\pi x = 0$

   C) $\dfrac{d^2x}{a^2} + 4\pi x = 0$

   D) $\dfrac{d^2x}{dt^2} + 4\pi^2 x = 0$

   Answer : D

3. If a graph is plotted between stress along y axis and strain within elastic limit along x axis, it is a staraight line :

   A) Parallel to y axis

   B) Parallel to x axis

   C) Inclined and passing through the origin

   D) Inclined and interception both the x and y axes

   Answer : C

4. When the intermolecular distances due to compressive force, there is :

   A) No force between molecules

   B) Attractive force between molecules

   C) Repulsive force between molecules

   D) Zero resultant force between molecules

   Answer : C

5. The length of the second's pendulum is increased by 2%. The clock using the pendulum in a day will

   A) Lose864sec

   B) Gain 864 sec

   C) Lose432sec

   D) Gain 432 sec

   Answer : A

Chemistry Sample Questions

1. A 500g tooth paste contains 0.2g of fluride. The fluoride concentration in ppm is

   A) 250

   B) 200

   C) 400

   D) 4000

   Answer : C

2. Phenol is used as a starting material for the manufacture of a drug known as

   A) Phenoyl

   B) Bakelite

   C) Aspirin

   D) Dettol

   Answer : C

3. The N-atom does not possess a lone pair of electrons in

   A) RNH_2

   B) R_2NH

   C) R_3N

   D) $[R_4NH]^+$

   Answer : D

4. In polymerization, the monimer and polymer do not differ in their

   A) Molecular weights

   B) Molecular formulate

   C) Empitical formulae

   D) Properties

   Answer : C

5. The Reduction potential NCE at 25oc is

   A) 0.3338V

   B) 0.2415V

   C) 0.2415 V

   D) 0.2415 V

   Answer : C

Biology Sample Questions

1. A process that uses microorganisms to convert harmful industrial wastes to less toxic or non-toxic compounds is

    A) Bioconversion

    B) Complement gambiense

    C) Precipitation

    D) Bioremediation

    Answer : D

2. In which of the animals dimorphic is found?

    A) Amoeba proteus

    B) Trypanosoma gambiense

    C) Plasmodium vivax

    D) Paramecium caudatum

    Answer : D

3. Chlorophyll molecules are green in colour because they

    A) Absorb green light

    B) Reflect green light

    C) Transform green light

    D) Transmit green light

    Answer : A

4. The voice box which is sound producing organ in the birds, is known as

    A) Syrinx

    B) Pharynx

    C) Larynx

    D) Vocal Cord

    Answer : A

5. In which of the following period reptile arose

    A) Jurassic

    B) Triassic

    C) Permian

    D) Pencylvarian

    Answer : C

English Sample Questions

1. Opposite of the given Word: Economy

    A. Extravagance

    B. Spend thrift

    C. Politics

    D. Society

      Answer. A

2. Pick out the answer choice from below options: I have _____ any money left

    A. Nearly

    B. Scarcely

    C. Hardly

    D. No

    Answer. B

3. Choose the option that has nearly the same meaning as the given word: Grace

    A. Daring

    B. Appropriate

    C. Favour

    D. Controversial

    Answer. C

4. Book: Read :: Pen: _____

    A. Pencil

    B. Write

    C. Ink

    D. Paper

    Answer. B

5. Given below is a proverb. Read it carefully. Then, from the four statements mentioned below proverb, lettered A, B, C, D, find the one that means the same thing.

Example: A bad workman blames his tools.

    A. People who talk a lot or threaten may not be actually harmful.

    B. It is preferable to be cautious than to be rash and get into trouble.

    C. Great talkers are little doers

    D. People who fail always blame others and find excuses.

    Answer. D

APPLICATION FORM

VIGNAN
U N I V E R S I T Y
Foundation for Science, Technology & Research
(Estd u/s 3 of UGC Act of 1956)

Building young India

PHOTOGRAPH
Paste your recent
passport size colour
photograph not older
than 3 months. Do not
pin or staple

READ DETAILED INSTRUCTIONS GIVEN SEPARATELY BEFORE FILLING THE APPLICATION FORM

ENGINEERING

V-SAT '12

● NAME OF THE APPLICANT (AS IT APPEARS IN CLASS X OR EQUIVALENT MARKS CARD)

SIGNATURE OF APPLICANT

● DATE OF BIRTH   SEX (TICK)   COURSE CHOICE   TEST CENTRE

DATE   MONTH   YEAR   MALE   FEMALE   CHOICE 1   CHOICE 2   CHOICE 3   CHOICE 1   CHOICE 2

● RELIGION   CATEGORY (TICK)

BC   SC   ST   PH   Others

● NAME OF THE PARENT /GUARDIAN

● ADDRESS FOR CORRESPONDENCE
DOOR /HOUSE No.

STREET NAME

LOCALITY /MANDAL

TOWN /CITY

DISTRICT   STATE   PINCODE

STD CODE   TELEPHONE NUMBER   MOBILE NUMBER

● EMAIL ID

ACADEMIC DETAILS

1. X Class

Year of Pass: ☐☐☐☐   Board: ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

State : ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

Marks & Percentage

TOTAL MARKS	MARKS OBTAINED	% OF MARKS

2. INTERMEDIATE or equivalent   Group : MPC : ☐   BiPC : ☐

College last attended :

Campus: _____   Place : _____

Year of Pass: ☐☐☐☐   Board : ☐☐☐☐☐☐☐☐☐☐☐☐☐☐

State : ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

SUBJECT WISE - INTERMEDIATE EXAMINATION *

SUBJECT	MAXIMUM MARKS	MARKS OBTAINED	% OF MARKS
English			
Sanskrit			
Maths-A/Botany			
Maths-B/Zoology			
Physics			
Chemistry			
Physics Practical			
Chemistry Practical			
Botany Practical			
Zoology Practical			
TOTAL			

Note : * If the final result is not declared at the time of filling this application form, enter Jr. Inter / 11th Class marks

DECLARATION : I hereby declare that all the particulars stated in this application are true to the best of my knowledge and belief. I have read and understood all provisions of the admission procedure and agree to abide by them. In the event of submission of fraudulent, incorrect or untrue information or suppression or distortion of any fact like educational qualification, marks etc., I understand that my admission is liable for

_____   _____
SIGNATURE OF PARENT/ GUARDIAN   SIGNATURE OF APPLICANT

APPLICATION FEE DETAILS :   CASH : ☐   OR   DD : ☐

PAYMENT MODE	NUMBER	DATE	AMOUNT	ISSUING BANK NAME	BRANCH

CASH RECEIVED BY : Mr./Ms. .... Signature .... Place ....

ACKNOWLEDGEMENT
Name of the Applicant : .... S/o /D/o ....
Received Application for Admission to B.Tech programme.

Place :
Date :

Signature of official with seal
Vignan University /School /College /Office

VIGNAN
UNIVERSITY
Foundation for Science, Technology & Research
(Estd u/s 3 of UGC Act of 1956)
Building young India

ENGINEERING

V-SAT '12

Contents

General Information about (BBM + MBA) 5 years MBA Integrated Programme

1. **Duration - 5 years course**

   BBM - 3 years

   MBA - 2 years

2. **Eligibility Criteria for Admission:**

   4 Admission to BBM + MBA Integrated programme will be through a written Test V-MAT '12. (Vignan's Management Aptitude Test - V-MAT is a written test to be conducted across A.P.).

   4 Candidates born on or after 1st July, 1991 and a pass in Intermediate or its equivalent (MPC/BiPC/MEC/CEC) with minimum 60% aggregate marks are eligible to appear for the admission test.

   Note: Candidates appearing /appeared for Qualifying Examination and awaiting results can also apply.

3. **Entrance Test Pattern.**

   English, Reasoning and Aptitude Test for 2 hours carrying 100 marks.

4. **Admission Procedure**

   4 The admission will be on the basis of the performance in the written test conducted by Vignan University.

   4 The merit position of the candidate for admission will be based on the score obtained in V-MAT '12, provided if he/she gets the required minimum marks in the qualifying examination as per the eligibility criteria. Admissions will be purely on merit and by following the reservation policy applicable to Vignan University.

   4 A common merit list will be prepared based on the performance in the written test and they will be called for the counseling to be held at the Vignan University premises at Vadlamudi, Guntur District through a common ranking.

   4 It is the responsibility of the candidates to ascertain whether they possess the requisite qualification for admission. Having been called for the written test/counseling does not necessarily mean acceptance of the eligibility/admission.

   4 The admission offered to a candidate who has been provisionally admitted to the programme will stand cancelled if he/she does not submit the relevant documents in original pertaining to admission (such as Marks Statements, Transfer Certificate, Conduct Certificate etc.) to the Director-Admissions before the date stipulated in the admission offer.

   4 Admissions to the programme will, however, be subject to verification of facts from the original certificates/documents of the candidates. In case any discrepancy is noticed even at a later point of time after admission, the management reserves the right to cancel the admission and such a decision shall be final and binding on the candidate.

5. V-MAT '12 Written Test and Admission Schedule :

IMPORTANT DATES TO REMEMBER	
1. Issue/download of application forms :	20th November 2011 onwards
2. Last date for receipt of filled in applications :	25th April 2012
3. Test Date & Time :	6th May 2012 : 10.00 A.M. to 12.00 NOON.
4. Publication of V-MAT'12 result :	25th May 2012
5. Counseling of merit listed candidates for admission :	11th to 15th June 2012 Venue : Vignan University, Vadlamudi, Guntur – 522 213 (A.P) Ph : + 91 863 2118487, 88

Note : The changes in the above schedule, if any, due to unavoidable circumstances will be informed to the candidates.

6. V-MAT '12 Question Paper Pattern
   - The question paper will be in English and consists of 3 sections (English, Reasoning and Aptitude)
   - The questions are of multiple choice and objective type. Each question has 4 options. Choose the right option and mark it on the OMR sheet.
   - Each correct answer carries one mark.
   - There is no negative marking.

S.No	Details
1	English - 25 Marks
2	Aptitude - 50 Marks
3	Reasoning - 25 Marks
	Total 100 questions (100 Marks)

7. V-MAT '12 Rules
   - Candidates should report to the respective centre 30 minutes prior to the commencement of the test.
   - Candidates must bring their hall ticket with them.

Note : Use of calculators, log tables and slide ruler, watches with facilities of calculator, pagers and cellular phones are strictly prohibited for the test. Candidates should not bring any material with them except the Hall Ticket, Pen, H.B. Pencil and eraser.

General Instructions

The test centre Co-ordinator is authorized to dismiss a candidate from the test for any of the following reasons:
   - Creating disturbance.
   - Attempting to take the test on behalf of someone else.
   - Talking to other test taker(s).
   - Use of calculators, slide rules, pagers, cell phones, concealed microphones, wireless devices or any other material that may aid in answering questions.

Timing & Breaks
   - The test is of 120 minutes duration.
   - No break is permitted during the test.

8. Application Forms

Issue: Application Forms will be issued from 10th November 2011 onwards. There are two modes of registration as under (for details visit our website www.vignanuniversity.org/admissions).

i. Direct

Candidates can obtain applications by post from the University Office on payment of Rs. 800/-(for boys), Rs. 600/-(for girls) by DD drawn in favour of Vignan University, payable at Guntur or in person from any of Vignan Schools or Offices at Guntur (Ph. 0863-2231326), Hyderabad (Ph. 9866399664), Rajahmundry (Ph. 9866399925), Visakhapatnam (Ph. 9052544736) and Vijayawada (Ph. 0866-6593777).

ii. Download

Application form can be downloaded from the university website : www.vignanuniversity.org. The filled application alongwith the DD for Rs. 800/- (for boys), Rs. 600/- (for girls) drawn in favour of Vignan University, payable at Guntur should be sent to reach the address given below before the last date specified. Candidates should write their name and address on the reverse of DD.

The completed applications should be sent to the following address so as to reach before the last date specified :

Director- Admissions
Vignan University
Vadlamudi,Guntur - 522 213 (A.P)
Ph : + 91 863 2118487, 88

Receipt of Application Forms

4   Lastdate for receipt of filled-in application at the University office is 25th April 2012.

4   Applications received after the due date will not be accepted.

4   Candidates are advised to retain a photo copy of the filled in application for future reference.

4   The University will not be responsible for any postal delay, loss in postal transit or any irregularity beyond the control of the University.

9. Information at different stages

Candidates will be informed about the status of the application as under :

Receipt of Application	Through e-mail (info@ univignan.org) using the application number about 10days after dispatching the application.
Hall Ticket	Mentioning Registration Number /Application Number and the Test Centre after processing the application.

10. Test Centres for V-MAT '12

The list of V-MAT '12Test Centres along with their corresponding codes is given under 'Instructions to fill up the application form'.

Important: The Test Centre, once allotted to the candidates, shall not be changed under any circumstances. While every effort will be made to allot a centre in the Test City opted by the candidate, the university reserves its right to allot a centre other than that of the candidate's choice.

11. Hall Ticket

   Important Information

   4 The Hall Ticket will be issued only to those eligible candidates who have submitted their application forms complete in all respects, on or before the last date as specified.

   4 The Hall Ticket will contain name, photograph, signature, address, address of the Test Centre allotted and test schedule.

   4 Hall Tickets will be dispatched through certificate of posting/speed post.

   4 The Hall Ticket once received should be carefully examined by the candidate. If any discrepancy is noticed, it should immediately be brought to the notice of the Director-Admissions, Vignan University.

   4 No candidate will be permitted to take the test without a valid Hall Ticket. The Hall Ticket should be presented to the invigilators for verification.

   4 The hall ticket can be downloaded from website www.vignanuniversity.org, one week prior to V-MAT'12 test date.

   4 Candidate must not tamper with the Hall Ticket or alter any entry made therein after it has been authenticated.

   4 The Hall Ticket is not transferable to any other person. Impersonation is a legally punishable offence.

   4 The Hall Ticket is an important document. It should be preserved and produced at the time of counseling and admission.

12. Hall Ticket not received due to application being incomplete

   Vignan University does not take any responsibility to inform candidates who have sent an incomplete application. Candidates are advised to double check that the application form is complete in all respects before posting.

13. Duplicate Hall Ticket

   In case a candidate fails to get a Hall Ticket 7 days before the scheduled date for V-MAT'12, he / she should report the same immediately to the Director-Admissions and if he/she does not receive the Hall Ticket before the examination date, he/she would have to meet the University Representative one day before the examination at the test centre with a photocopy of the application form, DD and two attested passport size photographs, identical to the one affixed in the application form. Enquiries pertaining to the Hall Ticket without mentioning application number will not be entertained under any circumstances.

14. Counseling Procedure for Allocation of Seats

   4 The date / time for counseling will be intimated to the candidates either by post or through SMS or E-Mail and will also be published in the university website : www.vignanuniversity.org /admissions.

   4 Change of date / time of counseling is generally not permissible. If a candidate fails to appear personally for counseling on the date and time specified, he/she will forfeit his candidature for the allotment of seat on that day. However, he / she is eligible to appear for subsequent counseling depending on the availability of seats.

   4 The candidates should produce the documents listed below in original along with one set of photocopies while reporting for counseling. Candidates will not be allowed to participate in the counseling process without these documents.

15. Required Documents in Original during Counseling

   4 Counseling call letter.

   4 V-MAT'12 Hall Ticket.

   4 V-MAT'12 Rank card.

   4 10th class marks memo as proof of date of birth.

   4 Marks sheet of qualifying examination.

   4 Cast certificate (if applicable)

   Candidates will be allowed to participate in the counseling process only after verification of the documents. Authentic records pertaining to identification, age, marks sheet of qualifying examination, and other eligibility criteria, will be checked. If a candidate fails to produce any of these documents, he/she will not be considered for counseling.

   4 The candidate will be offered a seat based on his /her rank in the merit list and availability of seats.

   4 After allotment of a seat in a branch and acceptance of the same by the candidate he / she will remit the prescribed tuition fee and admission fee either by cash or DD drawn in favour of Vignan University payable at Guntur.

16. Submission of Documents on Admission

The following documents in original are required to be submitted at the time of admission.

- 4 V-MAT'12 Hall Ticket.
- 4 V-MAT'12 Rank card.
- 4 Provisional letter of admission offer.
- 4 Qualifying examination mark sheets.
- 4 10th Class marks memo.
- 4 Transfer Certificate / Migration Certificate.
- 4 Caste Certificate (if applicable).
- 4 Conduct Certificate.

All the above referred documents shall be handed over to the Admission Office on or before the date prescribed by the University, failing which provisional admission accorded will stand cancelled.

17. Discontinuance / Withdrawal from the Programme

A candidate who desires to leave the institution after joining the programme will have to submit a NO DUES certificate issued by the competent authorities. This should be accompanied by the application for withdrawal and the original fee receipt.

The original certificates will be returned only on production of NO DUES certificate in the prescribed form, obtained from the Administrative Office.

18. General Discipline

All candidates admitted to the university shall follow code of conduct, pay the requisite tuition fee and other charges by the due dates, attend their classes regularly and abide by the rules and regulations of the university. If at any point of time, the conduct of a candidate is not satisfactory or is of a suspicious nature, the management reserves the right, to make him / her vacate the hostel or expel him / her from the university without assigning any reason thereof.

RAGGING IN ANY FORM IS FORBIDDEN. IF ANY ONE IS INVOLVED IN RAGGING HE/SHE CAN BE RUSTICATED FROM THE UNIVERSITY.

Note : Vignan University reserves the right to alter any date or activity schedule announced or add, alter or delete information contained under various headings owing to administrative / operational reasons. The university also reserves the right to alter any of the terms of admission with due notice to the candidates.

19. Tuition Fee

Admission Fee (1st year only) (non refundable)	Tuition Fee per year	
	1st Semester	2nd Semester
Rs. 10,000/-	Rs. 25,000/-	Rs. 25,000/-

20. Hostel Fee

Rs. 60,000/- + Rs. 5,000/- (Registration Fee) for A/C rooms & Rs. 55,000/- + Rs. 5,000/- (Registration Fee) for Non A/C rooms.

Study Loans

The admitted candidates are eligible to apply for a study loan towards tuition fee, hostel fee, transport and purchase of books in all Nationalised Banks including UCO bank situated on campus at Vadlamudi.

4 For more information contact UCO Bank, Vadlamudi, (Ph : 0863 - 2118495).

Instructions to fill up the Application Form

General Instructions

⁴ Read the following instructions carefully before filling in the application form. Requests for corrections will not be entertained later. Refer to the specimen copy enclosed in this brochure.

⁴ The application form should be filled by the candidate in his/her own handwriting. Candidates should send only the original application form and may retain a xerox copy.

⁴ The application form will be machine-processed. Hence take utmost care in writing with black ballpoint pen in the boxes wherever provided.

⁴ Do not scribble, cut, tear or erase the application form. Do not put any stray marks anywhere on the application form.

⁴ The photograph, signature and address of the applicant are to be machine-scanned. So paste a recent colour photograph of good quality with light colour background. Sign in the prescribed place using only a black ballpoint pen.

⁴ Note that your name, your parent's /guardian's name and your date of birth should be exactly the same as given in your 10th Class marks memo /Higher Secondary School examination certificate.

⁴ The application must be complete in all respects. An incomplete application or application filled in a language other than English will be rejected.

⁴ Candidates are advised to retain with them a photocopy of the filled-in application for future reference and quote the application number in all correspondence.

Instructions for Filling the Application Form (for downloaded applications)

I.   Carefully read the V-MAT '12 Instruction Guide before you proceed to fill the form.

ii. Read and understand all the instructions and eligibility criteria for admission before proceeding to fill the form.

iii. You are advised to take a printout of these instructions so that you can refer to the same while filling the form.

iv. Once you confirm the data entered, you will not be allowed to change the same.

v.   After downloading the form, you should take two copies of the printout. Once you take the printout of the form, affix your photograph, fill the application form, sign and attach the Demand Draft for Rs. 800/- (for boys), Rs. 600/- (for girls) drawn in favour of "Vignan University" payable at Guntur and send one copy of the same by registered post /speed post to the following address. You should keep the second copy with you for your reference.

Director - Admissions
Vignan University
Vadlamudi, Guntur - 522 213
Ph. No. : + 91 863 2118487, 88

Item wise Instructions for Filling the Application Form

1.   NAME OF THE APPLICANT - Write your name in CAPITAL LETTERS as it appears in your 10th class marks memo. Leave one blank box between adjacent words. Do not use any prefixes like Mr., Mrs., Miss/Ms. etc.
     For example : Mr. CHENNAMA PRASADA RAO should be written as

| C | H | E | N | N | A | M | A | | P | R | A | S | A | D | A | | R | A | O | |

2.   DATE OF BIRTH - Enter the date, month and year of your birth as recorded in 10th class marks memo in DD/MM/YY format only. When the number or date or month is a single digit, zero should be prefixed.

     For example : 17th April 1994 will be entered as

| 1 | 7 | 0 | 4 | 9 | 4 |

DATE MONTH YEAR

3. SEX - Tick Mark the appropriate box only.

    ☑   ☐
    MALE   FEMALE

4. Test Centre. Refer to the table given below for test centre codes. you can give any two choices as per priority. You may be allotted any one of them.

    For example, an applicant with Hyderabad as the first choice and Vijayawada as second choice should write as:

22	27

Test Centres

TEST CENTRE	CODE
Guntur	21
Hyderabad	22
Kurnool	23
Rajahmundry	24
Tirupati	25

TEST CENTRE	CODE
Vignan University	26
Vijayawada	27
Visakhapatnam	28

5. RELIGION : Write the religion

    | H | I | N | D | U | | | | | |

6. CATEGORY : Tick Mark the appropriate box only.

    ☐   ☐   ☐   ☐   ☑
    BC   SC   ST   PH   Others

7. NAME OF THE PARENT /GUARDIAN : Write the name of your parent or guardian.

    For example : Mr. CH. GOVINDA RAO

    | C | H | | G | O | V | I | N | D | A | | R | A | O | |

8. ADDRESS FOR CORRESPONDENCE - Write the complete postal address including PIN CODE to which communications are to be sent. Also write the telephone number with STD code and e-mail address if any.

    For example the address is :

    PLOT NO. 38, PHASE III
    MAHATMA GANDHI MARG
    PARADISE CIRCLE
    HYDERABAD - 500104
    ADDRESS FOR CORRESPONDENCE (DO NOT REPEAT NAME)

DOOR / HOUSE No.

| P | L | O | T | | N | O | | 3 | 8 | | P | H | A | S | E | | I | I | I | | |

STREET NAME

| M | A | H | A | T | M | A | | G | A | N | D | H | I | | M | A | R | G | | | |

LOCALITY / MANDAL

| P | A | R | A | D | I | S | E | | C | I | R | C | L | E | | | | | | | |

TOWN / CITY

| H | Y | D | E | R | A | B | A | D | |

STATE

| A | P | | | | | | | | |

DISTRICT

| H | Y | D | E | R | A | B | A | D | | | | |

PINCODE

| 5 | 0 | 0 | 1 | 0 | 4 |

STD CODE

| O | 4 | O | | |

TELEPHONE NUMBER

| 2 | 5 | 3 | 4 | 5 | 4 | 6 | |

MOBILE NUMBER

| 9 | 9 | 0 | 0 | 3 | 3 | 4 | 4 | 5 | 5 |

EMAIL ID

| P | A | R | S | U | . | C | H | E | N | N | A | @ | G | M | A | I | L | . | C | O | M |

9. **PHOTOGRAPH** - Paste your recent passport size colour photograph (not older than three months) at appropriate place. Do not staple or pin the photograph.

10. **SIGNATURE OF APPLICANT** - Sign at the given place.

11. **DETAILS OF CLASS X** - Write the Year, Board and State from where you have passed class X.

12. **X CLASS EXAMINATION DETAILS** - Write maximum marks, marks obtained and percentage for all subjects put together.

13. **DETAILS OF INTERMEDIATE OR EQUIVALENT** - Write the group, college and campus last attended, place, year of pass, Board and State from where you have passed or appeared for Intermediate or equivalent examination.

14. **SUBJECT WISE MARKS - INTERMEDIATE EXAMINATION OR EQUIVALENT** - Tick the group in the box provided and write the name of the subject, Maximum marks, Marks obtained and the percentage. Also write the total maximum marks, total marks obtained and the percentage for all subjects put together. If the final result is not declared at the time of filling this application form, enter the Jr. Inter /11th class marks.

15. **APPLICATION FEE DETAILS:** Application can be obtained either by paying cash or submission of DD.

    DEMAND DRAFT: DD Amount Rs. 800/- (for boys), Rs. 600/- (for girls) drawn in favour of Vignan University, payable at Guntur.

    Write the DD number, date, amount, issuing bank & branch name . Also write your full name and address on the reverse of the DD.

16. **DECLARATION** - Candidate and the Parent / Guardian must sign with date the declaration to authenticate the information provided by them. Unsigned applications will not be accepted.

    ENVELOPE ADDRESSED TO:
    Director-Admissions
    Vignan University
    Vadlamudi, Guntur - 522 213 (A.P)
    Ph : + 91 863 2118487, 88

SAMPLE APPLICATION FORM

VIGNAN
U N I V E R S I T Y
Foundation for Science, Technology & Research
(Estd u/s 3 of UGC Act of 1956)

Building young India

READ DETAILED INSTRUCTIONS GIVEN SEPARATELY BEFORE FILLING THE APPLICATION FORM

SIGNATURE OF APPLICANT

INTEGRATED BBM+ MBA

V-MAT '12

- **NAME OF THE APPLICANT** (AS IT APPEARS IN CLASS X OR EQUIVALENT MARKS CARD)

| C | H | E | N | N | A | M | A | | P | R | A | S | A | D | A | | R | A | O | | |

- **DATE OF BIRTH**

| 1 | 7 | 0 | 4 | 9 | 4 |
| DATE | | MONTH | | YEAR | |

SEX (TICK) ✔ MALE / FEMALE

TEST CENTRE

| 2 | 2 | 2 | 7 |
| CHOICE 1 | | CHOICE 2 | |

- **RELIGION**

| H | I | N | D | U | | | | | | | | |

CATEGORY (TICK): BC, SC, ST, PH, Others ✔

- **NAME OF THE PARENT /GUARDIAN**

| C | H | | G | O | V | I | N | D | A | | R | A | O | | | | | | | |

- **ADDRESS FOR CORRESPONDENCE**

DOOR /HOUSE No.

| P | L | O | T | | N | O | | 3 | 8 | | P | H | A | S | E | | I | I | I |

STREET NAME

| M | A | H | A | T | M | A | | G | A | N | D | H | I | | M | A | R | G | |

LOCALITY /MANDAL

| P | A | R | A | D | I | S | E | | C | I | R | C | L | E | | | | | |

TOWN /CITY

| H | Y | D | E | R | A | B | A | D | |

STATE

| | | | | | | | | |

DISTRICT

| H | Y | D | E | R | A | B | A | D | | | | | | |

PINCODE

| 5 | 0 | 0 | 1 | 0 | 4 |

STD CODE

| 0 | 4 | 0 | | |

TELEPHONE NUMBER

| 2 | 5 | 3 | 4 | 5 | 4 | 6 |

MOBILE NUMBER

| 9 | 9 | 0 | 0 | 3 | 3 | 4 | 4 | 5 | 5 |

- **EMAIL ID**

| P | A | R | S | U | · | C | H | E | N | N | A | @ | G | M | A | I | L | · | C | O | M |

ACADEMIC DETAILS

1. X Class

Year of Pass: `2` `0` `1` `0` Board: `S` `T` `A` `T` `E`

State : `A` `N` `D` `H` `R` `A` ` ` `P` `R` `A` `D` `E` `S` `H`

Marks & Percentage

TOTAL MARKS	MARKS OBTAINED	% OF MARKS
600	480	80%

2. INTERMEDIATE or equivalent Group : _____

College last attended :

Campus :   Place :

Year of Pass: `2` `0` `1` `2` Board: `S` `T` `A` `T` `E`

State : `A` `N` `D` `H` `R` `A` ` ` `P` `R` `A` `D` `E` `S` `H`

SUBJECT WISE - INTERMEDIATE EXAMINATION *

SUBJECT	MAXIMUM MARKS	MARKS OBTAINED	% OF MARKS
English	200	176	88%
Sanskrit	200	192	96%
Maths-A/Botany/Civics			
Maths-B/Zoology/			
Physics/Economics			
Chemistry/Commerce			
Physics Practical			
Chemistry Practical			
Botany Practical			
Zoology Practical			
TOTAL	1000	933	93.3%

Note : * If the final result is not declared at the time of filling this application form, enter Jr. Inter / 11th Class marks

DECLARATION : I hereby declare that all the particulars stated in this application are true to the best of my knowledge and belief. I have read and understood all provisions of the admission procedure and agree to abide by them. In the event of submission of fraudulent, incorrect or untrue information or suppression or distortion of any fact like educational qualification, marks etc., I understand that my admission is liable for cancellation. Further I understand that my admission is purely provisional subject to the fulfilment of the eligibility criteria.

_____   _____
SIGNATURE OF PARENT/ GUARDIAN   SIGNATURE OF APPLICANT

APPLICATION FEE DETAILS : CASH : ☐ OR DD : ✔

PAYMENT MODE	NUMBER	DATE	AMOUNT	ISSUING BANK NAME	BRANCH
DD DETAILS	190598	11-12-2011	800/-	SBI	Vijayawada

CASH RECEIVED BY : Mr./Ms. R. Vinay Kumar .... Signature .... Place ....

ACKNOWLEDGEMENT

Name of the Applicant : .... S/o /D/o ....

Received Application for Admission to 5 years Integrated BBM+MBA Programme.

Place : Hyderabad

Date : 15-12-2011

Signature of official with seal
Vignan University /School /College /Office

VIGNAN
UNIVERSITY
Foundation for Science, Technology & Research
(Estd u/s 3 of UGC Act of 1956)
Building young India

APPLICATION FORM

VIGNAN
U N I V E R S I T Y
Foundation for Science, Technology & Research
(Estd u/s 3 of UGC Act of 1956)

Building young India

READ DETAILED INSTRUCTIONS GIVEN SEPARATELY BEFORE FILLING THE APPLICATION FORM

INTEGRATED BBM+MBA

V-MAT '12

● NAME OF THE APPLICANT (AS IT APPEARS IN CLASS X OR EQUIVALENT MARKS CARD)

SIGNATURE OF APPLICANT

● DATE OF BIRTH   SEX (TICK)   TEST CENTRE

DATE   MONTH   YEAR   MALE FEMALE   CHOICE 1   CHOICE 2

● RELIGION   CATEGORY (TICK)

BC   SC   ST   PH   Others

● NAME OF THE PARENT /GUARDIAN

● ADDRESS FOR CORRESPONDENCE
DOOR /HOUSE No.

STREET NAME

LOCALITY /MANDAL

TOWN /CITY   STATE

DISTRICT   PINCODE

STD CODE   TELEPHONE NUMBER   MOBILE NUMBER

● EMAIL ID

ACADEMIC DETAILS

1. X Class

Year of Pass: | | | | | Board: | | | | | | | | | | | | | | | | | | |

State : | | | | | | | | | | | | | | | | | | | | | |

Marks & Percentage

TOTAL MARKS	MARKS OBTAINED	% OF MARKS

2. INTERMEDIATE or equivalent   Group : _____

College last attended :

Campus: _____   Place : _____

Year of Pass: | | | | | Board: | | | | | | | | | | | | | | | | |

State : | | | | | | | | | | | | | | | | | | | | |

SUBJECT WISE - INTERMEDIATE EXAMINATION *

SUBJECT	MAXIMUM MARKS	MARKS OBTAINED	% OF MARKS
TOTAL			

Note : * If the final result is not declared at the time of filling this application form, enter Jr. Inter / 11th Class marks

DECLARATION : I hereby declare that all the particulars stated in this application are true to the best of my knowledge and belief. I have read and understood all provisions of the admission procedure and agree to abide by them. In the event of submission of fraudulent, incorrect or untrue information or suppression or distortion of any fact like educational qualification, marks etc., I understand that my admission is liable for cancellation. Further I understand that my admission is purely provisional subject to the fulfilment of the eligibility criteria.

_____   _____
SIGNATURE OF PARENT/ GUARDIAN   SIGNATURE OF APPLICANT

APPLICATION FEE DETAILS :   CASH : | | OR   DD : | |

PAYMENT MODE	NUMBER	DATE	AMOUNT	ISSUING BANK NAME	BRANCH

CASH RECEIVED BY : Mr./Ms. .... Signature .... Place ....

_____

ACKNOWLEDGEMENT

Name of the Applicant : .... S/o /D/o ....

Received Application for Admission to 5 years Integrated BBM+MBA Programme.

Place :
Date :

Signature of official with seal
Vignan University /School /College /Office

VIGNAN UNIVERSITY
Foundation for Science, Technology & Research
(Estd u/s 3 of UGC Act of 1956)
Building young India

INTEGRATED BBM+ MBA

V-MAT '12

APPLICATION FORM

VIGNAN
U N I V E R S I T Y
Foundation for Science, Technology & Research
(Estd u/s 3 of UGC Act of 1956)

Building young India

READ DETAILED INSTRUCTIONS GIVEN SEPARATELY BEFORE FILLING THE APPLICATION FORM

- NAME OF THE APPLICANT (AS IT APPEARS IN CLASS X OR EQUIVALENT MARKS CARD)

SIGNATURE OF APPLICANT

INTEGRATED BBM+MBA

- DATE OF BIRTH   SEX (TICK)   TEST CENTRE

DATE   MONTH   YEAR   MALE FEMALE   CHOICE 1   CHOICE 2

- RELIGION   CATEGORY (TICK)

BC   SC   ST   PH   Others

- NAME OF THE PARENT /GUARDIAN

- ADDRESS FOR CORRESPONDENCE
  DOOR /HOUSE No.

  STREET NAME

  LOCALITY /MANDAL

  TOWN /CITY

  DISTRICT   STATE   PINCODE

V-MAT '12

  STD CODE   TELEPHONE NUMBER   MOBILE NUMBER

- EMAIL ID

ACADEMIC DETAILS

1. X Class

Year of Pass : ☐☐☐☐   Board : ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

State : ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

Marks & Percentage

TOTAL MARKS	MARKS OBTAINED	% OF MARKS

2. INTERMEDIATE or equivalent   Group : _____

College last attended : _____

Campus : _____   Place : _____

Year of Pass : ☐☐☐☐   Board : ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

State : ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

SUBJECT WISE - INTERMEDIATE EXAMINATION *

SUBJECT	MAXIMUM MARKS	MARKS OBTAINED	% OF MARKS
TOTAL			

Note : * If the final result is not declared at the time of filling this application form, enter Jr. Inter / 11th Class marks

DECLARATION : I hereby declare that all the particulars stated in this application are true to the best of my knowledge and belief. I have read and understood all provisions of the admission procedure and agree to abide by them. In the event of submission of fraudulent, incorrect or untrue information or suppression or distortion of any fact like educational qualification, marks etc., I understand that my admission is liable for cancellation. Further I understand that my admission is purely provisional subject to the fulfilment of the eligibility criteria.

_____   _____
SIGNATURE OF PARENT/ GUARDIAN   SIGNATURE OF APPLICANT

APPLICATION FEE DETAILS :   CASH : ☐   OR   DD : ☐

PAYMENT MODE	NUMBER	DATE	AMOUNT	ISSUING BANK NAME	BRANCH

CASH RECEIVED BY : Mr./Ms. .... Signature .... Place ....

ACKNOWLEDGEMENT

Name of the Applicant : .... S/o /D/o ....
Received Application for Admission to 5 years Integrated MBA programme.

Place :
Date :

Signature of official with seal
Vignan University /School /College /Office

VIGNAN
UNIVERSITY
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