FYJC ANNUAL PORTION SCIENCE

Mathematics & Statistics (Arts & Science)
FYJC
DISTRIBUTION OF-MARKS

PART I

SR.NO.	UNIT	SYLLABUS	MARKS
1.	Angle and its measurement	1.2	4
2.	Trigonometry-I	2.1	6
3.	Trigonometry-II	3.1, 3.2 , 3.3	8
4.	Determinates and Matrices	4.3, 4.5, 4.6	10
5.	Straight Lines	5.2, 5.3, 5.4	5
6.	Circle	6.1	4
7.	Conics Sections	7.1,7.2	8
8.	Measurement of dispersion	8.1 , 8.2	5
9.	Probability	9.2	6

PART II

SR.NO.	UNIT	SYLLABUS	MARKS
1.	Complex Numbers	1.1	6
2.	Sequences and Series	2.2 , 2.4	7
3.	Permutations and Combinations	3.2 , 3.3 , 3.6	8
4.	Method of Induction and Binomial Theorem	4.2	7
5.	Sets and Relations	5.2	6
6.	Functions	6.1	5
7.	Limits	7.1,7.2,7.3,7.4,7.6	6
8.	Continuity	8.1	5
9.	Differentiation	9.2	6

FY JC Annual Examination Mathematics (Arts & Science)
FORMAT OF QUESTION PAPER

Time : 3 Hours **Total Marks - 80**

General Instructions:

The question paper is divided into FOUR sections.

1) **Section A**: Q:1 Contains **Eight** multiple choice questions carrying **Two** marks each.
   Q:2 Contains Four very short answer type questions carrying One mark each.
2) **Section B**: contains **Twelve** short answer type questions carrying **Two** marks each.
   (Attempt any **Eight**)
3) **Section C**: contains **Twelve** short answer type questions carrying **Three** marks each.
   (Attempt any **Eight**)
4) **Section D**: contains **Eight** long answer type questions carrying **Four** marks each.
   (Attempt any **Five**)
5) Use of log table is allowed. Use of calculator is **not** allowed.
6) Figures to the right indicate full marks.
7) Use of graph paper is not necessary. Only rough sketch of graph is expected.
8) For each multiple choice type questions, only the first attempt will be considered for evaluation.
9) Start answer to each section on a new page.

Section A

Q.No.1.Select and write the most appropriate answer from the given alternatives for each sub-question:
(i) to (viii) MCQ (2 marks each) [16]

Q.No.2. Answer the following questions : (1 mark each) [04]

(i) to (iv) VSA

Section B

Attempt any EIGHT of the following questions: (2 marks each) [16]

Q.No.3 to Q.No. 14 Short Answer - I

Section C

Attempt any EIGHT of the following questions: (3 marks each) [24]

Q.No.15 to Q.No. 26 Short Answer -II

Section D

Attempt any FIVE of the following questions: (4 marks each) [20]

Q.No.27 to Q.No. 34 Long Answer questions.

CHEMISTRY

1) Some basic concepts
2) redox reactions
3) Intro to analytical chemistry (empirical and molecular formula and concentration formulas with numericals)
4) chemical bonding
5) chemical equilibrium
6) Group 1 and 2 (Electronic configuration, physical and chemical properties, compounds of Group 1 and 2)
7) Structure of atom (from quantum number onwards)
8) Basic of organic chemistry (only IUPAC)
9) hydrocarbons (full)
10) periodic table (full)
11) Surface Chemistry (only adsorption and catalyst)

EM

PAPER 1
●symbols
●Electric circuit
●Conductor and insulators
●Work-power energy
●Effects of electric current
●Wiring accessories and types of wires
●Safety measures

PAPER 2
●DC motor
●Generation of electricity
●Alternator
●polyphase circuit
●Single phase Ac circuit

French.

Full text book

ENGLISH: (80+20)

UNIT 1- 1.1 TO 1.6
UNIT 2-2.1 to 2.6
UNIT 3- 3.1to 3.6
UNIT 4- 4.1 to 4.3B
Grammar all that is covered in 10th std and text (Brainstorming)
80- theory
20- MCQ (Grammar)

IT Portion

CH 1: Basics of IT
CH 2: Introduction to DBMS
CH 3: Impressive Web Designing
CH 4: Cyber Law
Syllabus for FYJC Annual exam, Mar-2025 :-
Subject:- Electronics- I
Max.Marks:- 50

1. Sources of Power and Network theorems:- complete chapter
2. A.C fundamentals:- complete chapter
3. Instruments:- complete chapter
4. Study of components:- complete chapter except types of wires topic

30% marks of questions are asking on first term & 70% marks of questions are asking on second term

Sub:- Electronics -II
Max.marks:-50

1. Semiconductors:- complete chapter
2. Study of Transistors :- complete chapter except MOSFET topic
3. Study of Semiconductor components:- Types of diodes ,Photodiode,Phototransistor, Numericals in this chapter
4. Amplifiers:- complete chapter , Numericals in this chapter
5. Oscillators:- Uses of oscillators, feedback oscillator, RC oscillators, Tank circuit, L -C oscillators, Numericals

30% marks of questions are asking on first term and 70% marks of questions are asking on second term.

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Computer science

Paper 1
portion for Annual exam
number systems

Dec to binary Bin to dec
Dec to hexadecimal
Hexadecimal to dec. Binary addition
Binary subtraction by ones compliment method

introduction to Cpp
Introduction- variables,constant, keywords,datatypes,types of operators,conversion of mathematical expr to cpp,input stream(cin),output stream(cout),structure of cpp, if else, nested if else, else if ladder, switch case,ternary operator, loops-for, while, do while,break,continue,Arrays,Functions

Program Analysis

Programming,steps to develop a program,Algorithm,flowchart,pseudocode,Programming techniques-Structured and Modular

Practice all the programming questions for cpp and program analysis chapter(done in class and practicals)

Terminal examination will be of 50 Marks

20% question will be from sem 1 syllabus and rest will be from sem 2 syllabus

Computer science

Paper 2

Transistor working, gates basic, universall gates, half adder, full adder, sr flip flop, jk flip flop, 4 bit counter, multiplexer.

Functional parts of PC.

Perferal devices

Physics - Portion for annual exam

1. Units & measurements

> System of units, fundamental and derived quantities and their units. Conventions for the use of SI units.

Dimensions of physical quantities. Uses and limitations of dimensional analysis.

Estimation of errors .

Significant figures and order of magnitude.

2.Mathematical methods -

scalars , vectors , null vector, resultant vector , negative vector , equal vectors , position vectors , unit vectors , resolution of vectors , dot product , cross product , characteristics of dot product & cross product.

3. Motion in a plane - average speed, average velocity, instantaneous speed, instantaneous velocity, relative velocity, projectile motion:- Range, time of flight, maximum height.

4. Laws of motion - Newton’s laws of motion, types of forces, collision: elastic, inelastic collision, coefficient of restitution.

5. Gravitation - kepler’s laws of planetary motion, universal law of gravitation, variation of acceleration due to gravity with height and depth, Escape velocity, Satellites, critical velocity. 6.Mechanical properties of solids

Deformation and deforming force. Elastic behaviour of solids .

Stress and their types

Strain and their types

Hooke's law, Modulus of elasticity and their types, Poisson's ratio.

Friction in solids, types of frictions, laws of static and kinetic frictions. Advantages and disadvantages of frictions, methods for reducing the friction.

7. Thermal properties of matter -Celsius scale, Fahrenit scale,absolute zero and absolute temperature,Ideal gas equation, Charles law,Gay lussacs law, Boyles law,Thermal expansion Linear expansion,Areal expansion,Volume expansion,relation between coefficient of expansion.

Coefficient of conductivity

8. Sound - Types of waves , common properties of all waves , characteristics of progressive waves , transverse waves & longitudinal waves , Newton's formula for velocity of sound , Laplace 's correction , effect of temperature , pressure & humidity on velocity of sound , echo

9. Optics -

Laws of reflection and refraction
Sign convention
Number of images formed
Power and lateral magnification
Refraction (real & apparent depth)
Total internal reflection
Optical fibre
Refraction at a single spherical surface
Dispersion
Relation between angles involved
Thin prism , angular Dispersion, mean deviation
Prism formula

10. Electrostatics -

Basic properties of electric charge , Quantization of charge,Coulombs law and its vector form,Relative permittivity and dielectric constant,Electric field,Electric lines of forces,Electric flux,Gauss law,Electric dipole,continues charge distribution.

11. Electric current through
conductor - Ohm,s law
Electric energy and power
Colour code
Rheostat
Specific resistance
Resistors connected in series and parallel
Electromotive force
Variation of resistance with temperature
Cells in series and parallel

12. Magnetism -

Magnetic lines of force and Magnetic field
Bar magnet:
Axis
Equator
Magnetic and geometric length
Magnetic field due to a bar magnet along the axis and equator
Magnetic field due to bar magnet at an arbitrary point
Earth's magnetism:
Geographic axis
Geographic
meridian
Geographic equator
Magnetic axis
Magnetic meridian

Magnetic equator
Magnetic inclination
Magnetic declination

13. E.M.waves & communication -
Properties and uses of Gamma, X-ray, UV rays, infrared rays, visible rays, Microwaves, radio waves.
14. Semiconductors- Electrical conduction in solids, Band theory of solids, Intrinsic semiconductor, Extrinsic semiconductors, pn junction, pn junction diode, Advantages Disadvantages of semiconductor devices, Applications of semiconductors and pn junction diode and Thermistor

मराठी
संपूर्ण पाठ्यपुस्तक.

व्याकरर्-पाठ्यपुस्तकातील व्याकर◌ाासह १.अनेक शब्◌ांसाठी एक शब्
२. प्रत्ययघटित- उपसर्णघटित शब्
3. समानार्थी शब्
4. टिरुद्धार्थी शब्
5. ि◌ात न बस◌ारा शब् ओळख◌रे्
6. शब् ि ◌िाक्य शुद्ध करून टलहा 7. ◌िचन बदला .

Psychology
Full portion: chapters 1 to 8
FOR BIOLOGY 2025

30% of weightage from first term portion as follows:

1. Ch-1: Living world
2. Ch-2: Systematics of Living Organism
3. Ch-5: Cell Division
4. Ch-8: Plant tissues and Anatomy
5. Ch-4: Kingdom Animalia
6. Ch-13: Respiration and energy transfer
7. Ch-14: Human Nutrition
8. Ch-15: Excretion and Osmoregulation

70% of weightage from second term portion as follows:

1. Ch-3: Kingdom Plantae (complete)
2. Ch-5: Cell Structure and Organisation (complete)
3. Ch-6: Biomolecules Unit 6.2 A to D
4. Ch-9: Morphology of Flowering Plant Unit 9.2 A, D, E.
5. Ch-10: Animal tissues Unit 10.1 & 10.2
6. Ch-12 Photosynthesis Unit 12.1 to 12.6
7. Ch-16 Skeleton and Movement (complete)

Hindi Annual exam

Full portion

मुहिारे पृष्ठ १०३

पाररभाटिक शब्िावली ६१ से ८०

Internal 20 marks

उपसर्ण, प्रत्यय ,टिलोम शब्,

टलंर् पररितणन

Economics

Full Textbook