

22/11/17

Government of Madras

HOME DEPARTMENT (EDUCATION)

G.O. No. 1480, 21st November 1917

University Regulations

Sanctioning certain alteration in the — to provide for the substitution of a new syllabus for the existing one in Mathematics for the B.A. Degree course in Group (i).

INDEXED

ORIGINAL

Government of Madras

HOME DEPARTMENT (EDUCATION)

G.O. No. 1480, 21st November 1917

University Regulations

Sanctioning certain alteration in the — to provide for the substitution of a new syllabus for the existing one in Mathematics for the B.A. Degree course in Group (i).

READ—the following paper :—

Letter—from F. DEWSBURY, Esq., B.A., LL.B., Registrar, University of Madras.

To—the Secretary to Government, Home (Education) Department.

Dated—Madras, the 3rd November 1917.

No.—6017.

I have the honour, by direction of the Syndicate, to submit for the sanction of Government under section 25 (1) of the Indian Universities Act, 1904, the enclosed alteration to regulation 195 providing for the substitution of a revised syllabus for the existing syllabus in Mathematics for the B.A. Degree examination in Group (i), which was adopted by the Senate at its meeting held on the 19th October 1917.

The revision of the existing syllabus in Mathematics was undertaken by the Board of Studies in Mathematics with a view to the inclusion of the Elements of the Calculus therein, without any corresponding increase in the syllabus as a whole. The Syndicate approved of the proposals unanimously adopted by the Board and recommended the revised regulations for adoption by the Senate. It is intended that the alterations should take effect from July 1918.

ENCLOSURE

Resolutions adopted by the Senate at its meeting held on 19th October 1917.

I. That in regulation 195 II, under (i) *Mathematics* for the existing syllabus the following be substituted :—

(i) MATHEMATICS.

In addition to the subjects prescribed under (a) *Mathematics*, (b) *Physics* in Group (i) for the Intermediate examination, the course will comprise Algebra, Plane Trigonometry, Geometry, Elements of the Calculus, Dynamics, Hydrostatics, Astronomy, Properties of Matter, and one of the following groups of subjects at the option of the candidate :—

(1) Heat and Light. (2) Magnetism, Electricity and Sound.

PURE MATHEMATICS.

Algebra.—Inequalities, Limits, Elementary theorems in convergence and divergence of series. The binomial theorem for a rational index. Exponential and Logarithmic series. Partial fractions, elementary methods for the summation of series, elementary properties of continued fractions, Indeterminate equations of the first degree. Elementary properties of Determinants.

Typical graphs :

$$y = ax^n, y = a/x^n, y = ax + b + c/x, y = ax + b + c/x^2.$$

Graphical solution of cubic and biquadratic equations

General properties of the equation of the n th degree and its roots and co-efficients. Simple transformations of equations. Reciprocal equations. Approximate solution of numerical equations.

Trigonometry.—Fuller treatment of the Intermediate Course. *Quadrilaterals inscribed in and circumscribed about circles*. *Regular polygons*. *Limits of $\sin x/x$ and $\tan x/x$ as x tends to zero*. De Moivre's theorem and its immediate applications. Summation of elementary trigonometrical series.

Pure Geometry.—As in the Intermediate course, and in addition : Harmonic ranges and pencils. Inversion.

Geometry of the line, plane, sphere, the right cylinder and the right cone.

The fundamental geometrical properties of the conic sections.

Analytical Geometry.—The Cartesian equations of the straight line and the circle referred to rectangular axes, the parabola, ellipse and hyperbola referred to their principal axes, and the rectangular hyperbola referred to its asymptotes. The general equation of the second degree. The polar equations of the straight line, circle and the conic. Simple problems on the above.

The Calculus.—Standard forms and fundamental processes of differentiation and integration. Simple applications of the derivative to geometry, algebra, mechanics and physics. Maxima and minima values of a function of one variable. Theorem of mean value (graphical proof). Approximations and small errors. Curvature, Cartesian formula for the radius of curvature. Integration by substitution. Integration by parts. Integration regarded as summation, with simple applications to areas, volumes and surfaces and to mechanics. Solution of the differential equation of simple harmonic motion. The standard expected will be that of *the Calculus for Beginners* by J. W. Mercer (Cambridge University Press).

APPLIED MATHEMATICS.

Dynamics.—Resolution and composition of displacements, velocities, and accelerations. Curves of speed and velocity diagrams. Motion of a particle in one plane under constant accelerations. Simple harmonic motion; composition of simple harmonic motions. Angular velocity and angular acceleration; moment of velocity.

Absolute units of force. Resolution and composition of forces. Angular momentum: moments of inertia in simple cases; the pendulum; determination of *g*. Work, energy, conservation of energy; energy diagrams. Impact; the ballistic pendulum. Simple cases of the dynamics of strings. Dimensions of dynamical units.

Conditions of equilibrium of a body acted on by forces in one plane. Moments, couples. Centre of mass. The theory of simple machines. Laws of friction. Graphical methods with simple applications.

Hydrostatics.—As in Group (ii-A).

Astronomy.—The apparent motion of the heavens. Circumpolar stars. The principal constellations and the most conspicuous stars.

The celestial sphere. Points and lines on it:—Horizon, zenith, poles, meridian, etc.: the equinoctial points, etc.

Celestial co-ordinates: right ascension, declination, etc., latitude and longitude.

The transit circle, the equatorial, the clock. *The transit theodolite.* The sextant and chronometer.

Phenomena depending on change of latitude and longitude of the observer: Magnitude of the earth.

The apparent annual motion of the sun. The constellations of the zodiac. The ecliptic and its obliquity. The equinoxes and the solstices. *The earth's motion round the sun.* The seasons.

Sidereal time, apparent solar time, mean solar time. Equation of time. Standard time (India). Civil and astronomical reckoning. Conversion of time.

Explanation of astronomical refraction and parallax. Twilight.

Determination by observation of clock error and rate, of right ascension and declination of a heavenly body, and of the latitude and longitude of a station.

The solar system, and the motion of the planets. *Kepler's laws.* Comets and meteors.

The motion of the moon and her phases. The plane of her orbit. The nodes and their motion. The moon's sidereal and synodic periods. Her diameter and distance.

Distances and magnitudes of the sun, moon and planets.

Causes of the eclipses of the sun and moon. Ecliptic limits. *Number of eclipses in a year.*

The Calendar. *The use of the Nautical Almanac.*

Properties of Matter.—As in Group (ii-A).

Heat and Light.—As in Group (ii-A).

or

Magnetism, Electricity and Sound.—As in Group (ii-A).

II. That in regulation 196, under optional Group (i) *Mathematics*, for the existing timetable for the third, fourth and fifth days the following be substituted:—

Days.	Hours.	Subjects.	Marks.
Third day	10—12—30	Algebra	50
	2—5	Trigonometry and Pure Geometry.	60
Fourth day	10—12	Analytical Geometry	40
	2—4—30	Elementary Calculus	50
Fifth day	10—12	Astronomy	40

III. That the above alterations take effect from July 1918.

Order—No. 1480, Home (Education), dated 21st November 1917.

Under section 25 (1) of the Indian Universities Act, 1904, the Government sanction the alteration in the University Regulations submitted with the Registrar's letter read above providing for the substitution of the revised syllabus for the existing syllabus in Mathematics for the B.A. Degree examination in Group (i).

(True extract)

R. RAMACHANDRA RAO,
Secretary to Government.

To the Registrar, University of Madras.

Copy to the Director of Public Instruction.

Editors' Table.

Sanctification contains abstinence

READ AGAIN G.O. No., dated 191...

” ” ” ” ” 191

READ ALSO:—

C. No. 1371/B From the Bag. 1, University No. 8107, dated 3. 11. 1917
of Madras

ORDER.

No. 1480, dated 21. 11. 1917

P.S.

Under Section 25(1)
of the Indian Universities
Act, 1904, the Govt. sanction
the alterations in the
University Regulations
providing for the
substitution of the revised
syllabus submitted with
the Registrar's letter read
also of the existing
syllabus in Mathematics
for the B. A. Degree exams.
in Group V).

6. The Regd. arrival of
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loops to the D.P.S.
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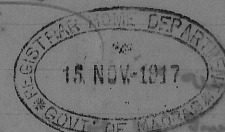
17.11.17

le 13/11/17, found the Reg. of Madras 8107, d/3/17
 Sulejaski. Allegations in the University
 Regulation relating to the B. A.
 Degree course in Mathematics.

The revised syllabus
 may in the first instance be
 reported w/o to the D. P. D. for
 remarks.

8-11-17
 9-11-17
 10-11-17
 D. P. D. No

No 2348/14. 11. 17
 his allegations may be approved



The draft below is Subd.

for off.
 15-11-17
 17-11-17
 19-11-17
 20 NOV 1917



21/11/17

[Faint, mostly illegible handwritten notes on the left page, including fragments like 'widowhood', 'admission', 'B. A.', 'D. P. D.', and '11-15 0841']

Sept. II-38-2-15

PREFERENCE.

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