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ANNAMALAI UNIVERSITY

**B.A. and B.Sc. Part I and Honours
Preliminary Examinations, 1936**

MONDAY, 23RD MARCH]

[10 A.M. TO 1 P.M.

PART I

MODERN ENGLISH PROSE

Marks

I. Attempt *one* of the following :—

(a) “Carlyle wrote history in a style ‘in which the truth cannot be told’.”—Discuss with reference to *The French Revolution*.

(b) “Poor ill-advised Marie Antoinette with a woman’s vehemence, not with a sovereign’s foresight!”—How does Carlyle substantiate this view?

(c) What contrast does Carlyle draw between Danton and Robespierre?

15

II. Attempt *one* of the following :—

(a) What views does Ruskin set forth in *The Crown of Wild Olive* on the meaning and use of wealth?

(b) State and discuss Ruskin’s comparison between the building of Exchanges and the building of places of worship.

(c) How does Ruskin illustrate his statement that war is the foundation of great art? Is the illustration convincing?

15

III. Attempt *one* of the following :—

(a) ‘History is at once a science and an art.’—How does Trevelyan establish this view?

(b) Indicate the contribution made by Byron and by “the Italian Triumvirate” to the creation of United Italy.

(c) What, according to Trevelyan, are the excellences and limitations of Carlyle as a historian? 15

IV. *To be attempted by Pass candidates only :—*

(a) Illustrate Hazlitt's pathos.

— Or —

Discuss Hazlitt's criticism of Burke and Rousseau.

— Or —

'Richard is a gay villain: Iago a grave one.'—How does Hazlitt substantiate this?

(b) Write an essay on *either* the history of Charlotte Corday, *or* Ruskin as a prophet, *or* History as an educator of the mind, *or* the "lively skirmishes" at Lamb's evening parties. 30

V. *To be attempted by Honours candidates only :—*

(a) Describe the circumstances which led to the failure of the flight of the Royal party to Metz.

— Or —

What, according to Ruskin, should be the relations between employers and employees?

— Or —

Why does Trevelyan consider John Woolman a better example for the world in religion and politics than St. Augustine and Rousseau?

(b) Write an essay on *either* the history of Charlotte Corday, *or* Ruskin as a prophet, *or* History as an educator of the mind. 30

VI. Annotate *five* of the following :—

[Pass candidates should take one passage at least from each of the groups A, B, C and D; Honours candidates should omit D and take at least one passage from each of the groups A, B and C.]

A

1. A Phalaris shut in the belly of his own red-heated Brazen Bull.

2. There is a Nessus' shirt on this Hercules; he must storm and burn there, without rest, till he be consumed.

3. No symbolic Ark, like the old Hebrews, do these men bear: yet with them too is a covenant.

4. "One carries not his country with him at the sole of his shoe!"

B

5. Stupidity is always the basis of the Judas bargain.

6. But now you live under one school of architecture, and worship under another.

7. Will you put an Olympus of silver upon a golden Pelion—make Ossa like a wart?

C

8. The truth is that the deliverer of Greece had not "doubled Cape Turk."

9. Falstaff might send Bardolph to bid them join him in the wayside tavern.

10. Medea has successfully put the old man into the pot, but I fail to see the fine youth whom she promised us.

D

11. He was "like the most capricious poet Ovid among the Goths."

12. I had better have formed myself on the model of Sir Fopling Flutter.

13. He said "it fitted the taste of the audience like a glove."

ANNAMALAI UNIVERSITY

B. A. & B. Sc. Part I and Honours
Preliminary Examination, 1936

WEDNESDAY, 25TH MARCH]

[10 A.M. to 1 P.M.

ENGLISH COMPOSITION

[Write *three* essays, choosing *one* subject from each group]

Marks

A

I. "Mackellar's is the one static and central character in the novel."

II. "Henry is, at the outset, a quiet, honest fellow, but persecution drives him mad."

III. James in America.

IV. The night of the duel in the shrubbery. 40

B

I. The Troad—sights, memories and reflections.

II. Jerusalem and its neighbourhood.

III. Dthemetri.

IV. From Cairo to Suez. 30

C

I. "In spite of dialect and detail and historical circumstance, *Wandering Willie's Tale* and *Paddy the Piper* are improbable stories."

II. "Murder will out."—Illustrate from *Mr. Higginbothams' Catastrophe* and *The Squire's Story*.

III. "Stern realism and moving sentiment are both found in *Malachi's Cove*."

IV. "There is ingenuity, but little characterisation in the story of crime."—Justify with reference to *The Squire's Story* and *A Terribly Strange Bed*. 30

ANNAMALAI UNIVERSITY

B. A. (Honours) Preliminary Examination, 1936

MONDAY, 23RD MARCH]

[10 A.M. TO 1 P.M.

BRANCH IV

HISTORY OF ENGLAND

[*Four* essays to be written, *one* from each group.]

(All questions carry equal marks)

A

I. The importance of the Danish settlement in England.

II. The contribution of the Church towards learning and scholarship in Anglo-Saxon England.

III. Life in an English manor in Feudal Times.

IV. The Crusades.

B

I. The Renaissance in England.

II. The foreign policy of the Tudors.

III. The national spirit in Elizabethan England.

IV. John Bunyan.

C

I. Write historical notes on two of the following:—Raleigh's *History of the World*; Bolingbroke's *The Patriot King*; Burke's *Reflections on the French Revolution*.

II. William Pitt, Earl of Chatham.

[T. O.]

III. The importance of sea-power in the wars against Napoleon.

IV. The social and economic condition of England in the first quarter of the 19th century.

D

I. The causes for the external expansion of England in the 19th century.

II. The Pre-Raphaelite Movement.

III. Democracy in England in the 19th century.

IV. The reign of King George V.

ANNAMALAI UNIVERSITY

B. A. and B. Sc. Degree Examination, 1936

THURSDAY, 26TH MARCH]

[10 A.M. TO 1 P.M.

PART II

PRESCRIBED TEXT-BOOKS

IN PROSE AND POETRY

[முதல் நான்கு கேள்விகள் ஒவ்வொன்றிலும் மும்முன்று உட்பிரிவுகளுக்கும் 5-வது கேள்வியில் 4 உட்பிரிவுகளுக்கும் விடை எழுதுக.]

I. 1. சேரமான் குட்டுவன் கோதையின் நாடும் ஊரும் யார் யார்க்கு எவ்வெவ்வியல்புடையவாயின?

2. “சிலைத்தார் முரசங்கறங்க, மலைத்தனையென் பது நாணுத்தகவுடைத்தே” மலைத்தல் நாணத்தகுந் தன்மைத்தாதல் எதனால்?

3. பொருநராற்றுப் படையால் அறியப்பட்ட கரிகால்வளவன் வரலாற்றை வரைக.

4. பரிசில் பெற்றுத் திரும்பிய பொருநன் தான் முன் உடுத்த ஆடையின் இயல்பையும், பின் அது நீக்கித் தலைவன் தனக்கு அளித்த ஆடையின் இயல்பையும் எங்ஙனங் கூறினான்?

II. 1. “காலாழ் களரின் நரியடுங் கண்ணஞ்சா வேலாண் முகத்த களிறு” இதற்கு அணியும் அதனைப் பெறப்படும் பொருளும் எழுதுக.

2. அரசனுடைய வலியாகிய இரும்பை அராவும் அரமும் அவன் செல்வமாகிய மரத்தைச் சிதைக்கும் கருவியும் இன்னவெனக் குறளிலிருந்து எடுத்துக் காட்டுக.

3. பாண்டிமாதேவி கண்ணகியாகிய இரு வருள் பாராட்டற்குரியவர் யாவர் எனச் செங்குட்டுவன் வினவியபோது வேண்மாள் கூறியவற்றை விளக்கி யெழுதுக.

4. “திகைமுக வேழத்தின் செவியகம்புக்கன” யாவை? எவ்வாறு புக்கன?

III. 1. பந்தாடுங்காற் சீவகனைக் கண்ணுற்ற விமலையின் உள்ளத்தெழுந்த காதல் எண்ணங்கள் யாவை?

2. சீவகன் விசயையைக் கண்டபொழுது அவ் விருவரிடத்தும் நிகழ்ந்த ஆர்வமொழிகள் என்னை?

3. “மதலையைக் காமின் என்றான்” யாவன்? காக்குமாறு யாங்ஙனம்?

4. சூர்ப்பநகை மூக்கறுப்புண்ட பின்னரும் இராம லக்குமணர்பால் அன்பிரட்டி பூண்டதற்கு ஏது வென்னை?

IV. 1. சூர்ப்பநகையின் கற்பும் சீதாபிராட்டியின் கற்பும் எவ்வாறு வருணிக்கப்பட்டன?

2. “அருந்து மருந்து மூன்றவையும் அகத்தே காட்டித்தருவோமே” என்று சித்தன் கூறிய மருந்து மூன்றும் இன்னவென விளக்கி யெழுதுக.

3. “முற்றலில் காய்க்காசையுற்றோர் மூத்தோர்த் தாழ்வோர் கழனி, நெற்றி கழலுறாஉ நெல் லையே” இதன் சிலேடைப் பொருளை வரைக.

4. ஈந்து பொருளற்ற வறிஞனும் ஈதற்கு வேண்டும் பொருளை இல்லாத வறிஞனும் தம்முள் ஒப்பா கார் என்பதற்கு எடுத்துக் காட்டப்பட்ட உவமைகள் யாவை?

V. 1. பாரியொடு பேசர் வினைத்தரர் யாவர்? அன் னார் பாரிமகளிரை மணம்புரியக் கேட்ட சந்தர்ப்பத்தையும், அதனைப்பற்றிய நும் கருத்தையும் எழுதுக.

2. குறிஞ்சிக்கலியுள் இன்பச்சுவையாவது நகைச்சுவையாவது தோற்றுவிக்கும் ஒரு செய்யுட்கருத்தை யெடுத்துக்காட்டி அதன்கண் அவ்விருசுவையும் பெறப்படு மாற்றையும் தெரிவிக்க.

3. இலங்கையணங் காவாள் யாவள்? அவளைப் பற்றிய கட்டுரையில் முக்கியமாக அறியப்படும் அறங்களை ஏதுக்காட்டி விளக்குக.

4. “அரக்கர்வாழ்வும் அமர்தாழ்வும்” என்னுங் கட்டுரையில் அகமும் புறமும் ஒவ்வாத நிலைமையொன்று எச்சந்தர்ப்பத்தில் அமைத்து எவ்வாறு காட்டப்பட்டுள்ளது?



ANNAMALAI UNIVERSITY

B. A. & B. Sc. Degree Examination, 1936

THURSDAY, 26TH MARCH]

[2 P.M. TO 5 P.M.

PART II

TAMIL COMPOSITION AND TRANSLATION

I. அடியிற்கண்டவற்றுள் ஒன்றைப்பற்றி ஒரு வியாசம் எழுதுக :—

அ. செல்வம் என்பது சிந்தையினிற்றே.

ஆ. கல்வியின் சிறந்த நோக்கம்.

இ. தனியுடைமை பொதுவுடைமைகளுக்கும் சமுதாய நலத்திற்குமுள்ள இயைபு முரண்பாடுகளும்.

II. இதனடியில் வரையப்பெற்ற ஆங்கிலப் பகுதியைத் தமிழில் மொழிபெயர்த்துக :—

There is no defence or security for any of us except in the highest intelligence and development of all. If anywhere there are efforts tending to curtail the fullest growth of the Negro, let these efforts be turned into stimulating, encouraging and making him the most useful and intelligent citizen. Effort or means so invested will pay a thousand per cent interest. These efforts will be twice blessed—"blessing him that gives and him that takes."

There is no escape through law of man or God from the inevitable :—

"The laws of changeless justice bind
Oppressor with oppressed ;
And close as sin and suffering joined
We march to fate abreast."

[T. O.

Nearly sixteen millions of hands will aid you in pulling the load upward, or they will pull against you the load downward. We shall constitute one-third and more of the ignorance and crime of the South, or one-third its intelligence and progress; we shall contribute one-third to the business and industrial prosperity of the South, or we shall prove a veritable body of death, stagnating, depressing, retarding every effort to advance the body politic.

Gentlemen of the Exposition, as we present to you our humble effort at an exhibition of our progress, you must not expect overmuch. Starting thirty years ago with ownership here and there in a few quilts and pumpkins and chickens (gathered from miscellaneous sources), remember the path that has led from these to the inventions and production of agricultural implements, buggies, steam-engines, newspapers, books, statuary, carving, paintings, the management of drug-stores and banks, has not been trodden without contact with thorns and thistles. While we take pride in what we exhibit as a result of our independent efforts, we do not for a moment forget that our part in this exhibition would fall far short of your expectations but for the constant help that has come to our educational life, not only from the Southern States, but especially from Northern philanthropists, who have made their gifts a constant stream of blessing and encouragement.

ANNAMALAI UNIVERSITY

B. A. and B. Sc. Degree Examination, 1936

THURSDAY, 26TH MARCH]

[10 A.M. TO 1 P.M.

PART II

SANSKRIT

PRESCRIBED TEXT-BOOKS IN PROSE AND POETRY

I. 'Indian poets portray not individuals but types'. Examine the truth of this observation with reference to any character in the *Śākuntala* or *Kādambarī*.

Or

'The path of love never runs smooth'.—Elucidate the truth of this saying with reference to the *Mahāśvetāvṛttānta*.

II. (a) Substantiate the idea contained in the following, taking suitable illustrations from the *Śākuntala* :—

‘उपमा कालिदासस्य ; वचसां रामणीयकम् ।’

(b) What is the main sentiment in the *fifth* act of the *Śākuntala*? Give reasons.

III. What is the source of the plot of the *Śākuntala*? Notice the deviations that the dramatist has introduced and comment upon their propriety.

IV. (a) Annotate any *four* of the following :—

1. अथवा भवितव्यानां द्वाराणि भवन्ति सर्वत्र ।
2. इदं तत्प्रत्युत्पन्नमति स्त्रैणमिति यदुच्यते ।
3. तमस्तपति घर्माशौ कथमाविर्भविष्यति ।
4. सङ्गीतार्थो ननु पशुपतेः तत्र भावी समग्रः ।

5. सूर्यापाये न खलु कमलं पुष्यति स्वामभिख्याम् ।
6. सर्वथा न हि किञ्चिदस्य दुर्घटं दुष्करमनायत्त-
मकर्तव्यं वा जगति ।

(b) Clearly bring out the significance of the following :—

1. रम्याणि वीक्ष्य मधुरांश्च निशम्य शब्दान्
पर्युत्सुको भवति यत्सुखितोऽपि जन्तुः ।
तच्चेतसा स्मरति नूनमबोधपूर्वं
भावस्थिराणि जननान्तरसौहृदानि ॥
2. नैतच्चित्रं यदयमुदधिश्चामसीमां धरित्रीं
एकः कृत्स्नां नगरपरिघप्रांशुबाहुर्भुनक्ति ।
आशंसन्ते सुरयुवतयः बद्धवैरा हि दैत्यै-
रस्याधिज्ये धनुषि विजयं पौरुहूते च वज्रे ॥

V. (a) Combine any *three* of the following, quoting the necessary rules thereof :—

1. ददत् + चक्षुः
2. अहो + ईशाः
3. पुनः + रमते
4. हरिः + शेते
5. तद् + मयः ।

(b) Name the *samāsa*, and give the *vigraha* of any *three* of the following :—

1. विटपान्तरितः
2. पिशिताशनाः
3. सुखसङ्गी
4. अधिज्यकार्मुकः
5. युवराजः
6. अनुकनखलम् ।

(c) Use any *two* of the following words in sentences of your own :—

1. अलं (in the sense of *enough*).
2. अलं (in the sense of *capable*).
3. ऋते (in the sense of *except*).

(d) Notice the grammar in :—

1. तत्रागारं धनपतिगृहानुत्तरेणास्मदीयम् ।
2. शक्यमरविन्दसुरभिः कणवाही मालिनीतरङ्गा-
णाम् ।

अङ्गैरनङ्गतपैरविरलमालिङ्गितुं पवनः ॥

VI. (a) Give an account of the *historical kāvya* in classical Sanskrit.

(b) Write short notes on any *three* :—

- i. *Aśvaghōṣa, Daṇḍin, Bilhāṇa, Srī Harṣa, Kṣemendra* ;

and any *three* :—

- ii. *Sūryaśataka, Kirātārjunīya, Vāsavadattā, Rāghavapāṇḍavīya, Śrīkaṇṭhacarita.*

ANNAMALAI UNIVERSITY

B. A. and B. Sc. Degree Examination, 1936

THURSDAY, 26TH MARCH]

[2 P.M. TO 5 P.M.

PART II

SANSKRIT TRANSLATION

I. Translate into Sanskrit:—

Several years have passed in happy love, and Purūravas has only one sorrow—that he is childless. One day a vulture snatches from the hand of a royal maid a treasured gem, which he takes to be a bit of bloody meat and flies with it, escaping before he can be killed. While the king and his companions lament the loss of the gem, the chamberlain enters, bringing the gem and an arrow with which the bird had been shot. On the arrow is written a verse declaring it to be the property of Āyus, son of Purūravas and Ūrvaśī. A hermit-woman is then ushered in, who brings a lad with her. She explains that the lad had been entrusted to her as soon as born by Ūrvaśī, and that it was he who had just shot the bird and recovered the gem. When Ūrvaśī is summoned to explain why she had concealed her child, she reminds the king of a decree of heaven that she should return to Indra's realm as soon as Purūravas should see the child to be born to them. She had therefore sacrificed maternal love to conjugal affection. Upon this, the king's new-found joy gives way to gloom. He determines to give up his kingdom and spend the remainder of his life as a hermit in the forest. But the situation is saved by a messenger from Paradise, bearing heaven's decree that Ūrvaśī shall live with the king until his death. A troop of nymphs then enter and assist in the solemn consecration of Āyus as crown prince.

II. Translate into English :—

(1) परिसमापिताहारां निर्वर्तितसंध्योचिताचारां शिला-
तले विस्रब्धमुपविष्टां निभृतमुपसृत्य नातिदूरे समुपविश्य
मुहूर्तमिव स्थित्वा चन्द्रापीडस्सविनयमवादीत्—‘ भगवति,
त्वत्प्रसादप्राप्तिप्रोत्साहितेन कुतूहलेनाकुलीक्रियमाणो मानुषता-
सुलभो लघिमा बलादनिच्छन्तमपि मां प्रश्नकर्मणि नियोजयति ।
जनयति हि प्रभुप्रसादलवोऽपि प्रागल्भमधीरप्रकृतेः । स्वल्पा-
प्येकदेशावस्थानकालकला परिचयमुत्पादयति । अणुरप्युपचार-
परिग्रहः प्रणयमारोपयति । तद्यदि नातिखेदकरमिव ततः कथने-
नात्मानमनुग्राह्यमिच्छामि । अतिमहत्खलु भवदर्शनात्प्रभृति मे
कौतुकमस्मिन्विषये । कतरन्मरुतामृषीणां गन्धर्वाणां गुह्यकाना-
मप्सरसां वा कुलमनुगृहीतुं भगवत्या जन्मना । किमर्थं
वास्मिन्कुसुमसुकुमारे नवे वयसि व्रतग्रहणम् ’ इति ॥

(2) कार्या सैकतलीनहंसमिथुना स्रोतोवहा मालिनी
पादास्तामभितो निषण्णहरिणा गौरीगुरोः पावनाः ।
शाखालम्बितवल्कलस्य च तरोर्निर्मातुमिच्छाम्यधः
शृङ्गे कृष्णमृगस्य वामनयनां कण्डूयमानां मृगीम् ॥

(3) सव्यापारामहनि न तथा पीडयेद्विप्रयोगः

शङ्के रात्रौ गुरुतरशुचं निर्विनोदां सखीं ते ।
मत्सन्देशैस्सुखयितुमलं पश्य साध्वीं निशीथे
तामुन्निद्रामवनिशयनां सद्यवातायनस्थः ॥

(4) परार्थे यः पीडामनुभवति भङ्गेऽपि मधुरः

यदीयस्सर्वेषामिह खलु विकारोऽप्यभिमतः ।
न संप्राप्तो वृद्धिं यदि स भृशमक्षेत्रपतितः
किमिक्षोर्दोषोऽसौ न पुनरगुणायामरुभुवः ॥

- (5) स वक्तुमखिलान् शक्तो हयग्रीवाश्रितान् गुणान् ।
योऽम्बुकुम्भैः परिच्छेदं ज्ञातुं शक्तो महोदधेः ॥
- (6) नास्था धर्मे न वसुनिचये नैव कामोपभोगे
यद्यद्भव्यं भवतु भगवन् पूर्वकर्मानुरूपम् ।
एतत् प्रार्थ्यं मम बहुमतं जन्मजन्मान्तरेऽपि
त्वत्पादाम्भोरुहयुगगता निश्चला भक्तिरस्तु ॥
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PART II: SECOND LANGUAGE

Malayalam: Prescribed Text-Books in Prose & Poetry

26th MARCH, 1936.]

[10 A.M. TO 1 P.M.

Answer Question X and any five of the rest.

[Question X carries 20 Marks and every other

Question 16 Marks.]

- I ഞാളിടനൊന്ന ശാകന്തള'ത്തിൽ കവികല്പിതമായ വൈചിത്ര്യങ്ങൾ ഏതെല്ലാമെന്നു പരിഗണിക്കുക.
- II അനസൂയാപ്രിയംവദമാരുടെ സ്വഭാവത്തെ താരതമ്യം ചെയ്യുക.
- III ദുർച്ചാസാവു മഹഷിയുടെ ശാപം കെട്ടേണ്ട നാടക കർത്താവു ഉദ്ദേശിച്ചിരിക്കുന്ന പ്രയോജനമെന്തു ?
- IV നാടകത്തിന്റെ സാമാന്യ ലക്ഷണം നിയ്ക്കുക, അതിൽ ശാകന്തളത്തിനുള്ള സ്ഥാനം നിണ്ണയിക്കുക.
- V കണ്ണപവും അസ്മദമാക്ഷി ശല്യരുടെയോ കണ്ണന്റേയോ, സ്വഭാവം വിമർശിക്കുക.
- VI “പ്രകൃതിയിൽ നിന്നു സമാഹരിച്ച സരസംലങ്കാരപ്രയോഗങ്ങളും, തത്പാചിന്തകളും, ധർമ്മോപദേശങ്ങളും ‘വിശ്വരൂപ’ത്തിലെങ്ങും വ്യാപിച്ചു കിടക്കുന്നു”—ഇതു അഭിപ്രായത്തെ സാധിക്കുന്നതിനുള്ള തെളിവുകൾ ശേഖരിക്കുക.

VII ഖണ്ഡ കാവ്യങ്ങൾക്കു് ആധുനിക ഭാഷാസാഹിത്യത്തിൽ അധികം പ്രചാരമുണ്ടാവാനുള്ള കാരണങ്ങൾ വിശദമാക്കി 'ഖണ്ഡിരവിലാപത്തേ'യോ 'കോമപ്പ'നേയോ ആശ്വദമാക്ക ഭരണ ചെറിയ ഉപന്യാസമെഴുതുക.

VIII മിശ്രഭാഷാകൃതി, ഉള്ളത്—ഇവയിലേതെങ്കിലും ഒരു പ്രസ്ഥാനത്തിന്റെ ചരിത്രം വിവരിക്കുക.

IX ഇന്ദുലേഖയിലെ പാത്രസൃഷ്ടി, സ്മരിനൻപുരിപ്പാടിന്റെ സ്വഭാവം—ഇവയിലേതെങ്കിലും ഒരു വിഷയത്തെക്കുറിച്ച് ഉപന്യസിക്കുക.

X ഏതെങ്കിലും മൂന്നെണ്ണത്തെ വ്യാഖ്യാനിക്കുകയും രണ്ടെണ്ണത്തിന്റെ വൃത്താലങ്കാരങ്ങൾ ലക്ഷണപുരസ്സരം നിദ്ദേശിക്കുകയും ചെയ്യുക.

1. കരിഞ്ചുണ്ടിച്ചുറ്റും കമലമലരിൽ കാന്തികരമാം; കറുത്താണെന്നു കേൾക്കി കറവിനാമോ വാധുവിനു? പ്രകാശം ചേർക്കുന്ന മരവിരിയുമൊട്ടേറെയിവളിൽ പ്രകൃത്യാ ചേലാണെന്നു ഓടലിനഴലേകാത്തതെന്താൻ?

2. ലോകൈകശീലി രജനീവനിതയ്ക്കു ചന്ദ്രന്മാൻ നക്ഷത്രമാല പണിചെയ്യവതിനു വേണ്ടി സൈവണ്ണ പിണ്ഡമതുരുകിയെടുത്തു നീരിൽ മുക്കുന്നിതാ തപന മണ്ഡല കൈതവത്താൻ.

3. ജയമൊടു വിജയപ്രഭാവമേകാ തവ പദ സേവനമാചരിച്ചൊടുക്കും, ശിവശിവ ! ഹത കണ്ണനാകിലും, ഞാൻ ഭവഭവനേശി ! രുലോമപാർത്ഥനായി.

4. കയ്യുക്കണക്കുമണയാതെ കനത്ത മാരി പെയ്യുക്കണക്കുടലു വീട്ടു കരിമ്പു വില്ലൻ എയ്യുക്കണയ്ക്കു മറുവില്ലറിവില്ലൊരാൾക്കും നിയ്യുക്കണക്കുമവനോടിവനേറ്റുതോറ്റു

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PART II: SECOND LANGUAGE

Malayalam: Translation and Composition

26th MARCH, 1936.]

[2 P.M. TO 5 P.M.]

*[Questions I and II (b) carry 30 Marks each and
Question II (a) 40 Marks.]*

I. Translate into Malayalam :—

What we have been examining is intentional memorizing, with the 'will to learn' strongly aroused. The assertion has sometimes been made that the will to learn is necessary if any learning is to be accomplished. We must look into this matter, for it has an important bearing on the whole question of the process of learning.

There is a famous incident that occurred in a Swiss Psychological laboratory, when a foreign student was supposed to be memorizing a list of nonsense syllables. After the list had been passed before him many times without his giving the expected signal that he was ready to recite, the experimenter remarked that he seemed to be having trouble in memorizing the syllables. "Oh! I did not understand that I was to learn them", he said, and it was found that, in fact, he had made almost no progress towards learning the list. He had been observing the separate syllables, with no effort to connect them into a series.

The experiment described a few pages back on "paired associates" is another case in point. The subjects memorized the pairs, but made no effort to connect the pairs in order, and consequently were not able later to remember the order of pairs.

Similar experiments have sought to measure the *reliability of testimony*, and have shown that the testimony of eye-witnesses is very unreliable except for facts that were definitely noted at the time. Enact a little scene before a class of unsuspecting students, and later quiz them on the facts that transpired before their eyes, and you get an astonishing amount of hazy and even false testimony.

II. താഴെ കാണുന്ന വിഷയങ്ങളെക്കുറിച്ച് മുൻപ് ഭാഗങ്ങളിൽ കവിയാതെ ഓരോ പ്രബന്ധങ്ങൾ എഴുതുക.

(a) “കാമനാശ്വരന്റെ വിവാഹ കാര്യവും രാജ്‌ദ്രസമം ധാരവും”

or

“ചിരതേയി അമ്മക്ക് കഥയിൽ ഉള്ള സ്ഥാനം.”

(b) “ഔദ്ധവും ലോകത്തിന്റെ സാമ്പത്തികസ്ഥിതിയും”
(War and World Economy.)

or

“മിശ്രവിദ്യാഭ്യാസം”

(Co-education.)

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B.A. and B.Sc. Degree Examinations March 1936.

PART II.

TELUGU.

(Prescribed Texts and Grammar.)

26th MARCH, 1936.]

[10. A.M. TO 1 P.M.

I ఆముక్తమాల్యదలోని ఋతువర్ణనాపై చిత్రములను విశదపఱచుము.

లేదేని

కళాపూర్ణోదయమందలి శృంగారరసశ్రేష్ఠత్వమును చర్చించుము.

లేదేని

యయాతిచరిత్రములోనున్న వేటవర్ణనమును వ్రాయుము.

II మిత్రలక్షణములగాని, అహింసాస్వరూపముగాని సంగ్రహముగా
నుపన్యసించుము.

III కోసలసామ్రాజ్య నాటకమునకు మాతృకయెద్ది ? దానినుండి కవిచే
సిన మార్పులను దెలుపుము. లేదేని

కోసలసామ్రాజ్యమందు ప్రాసురికభక్తువును దెలిపి, అది
అధికారికమునకెట్లు తోడ్పడనో చర్చించుము. లేదేని

శూర్పణఖ ప్రాత్రమును గుఱించి యొక వ్యాసము వ్రాయుము.

IV వీనిలో నేనాల్గింటికైన నుత్తరముల వ్రాయుము:—

(1) శ్రీరాములు శంభూకుని తపస్సును ధర్మవిరుద్ధమని యెట్లు
నిరూపించిరి ?

(2) కుశ సంధ్రకేతుల సంవాదమును ప్రోడికరించుము.

(3) రాయలు వ్రాసిన వరాహావతారవర్ణనమును పద్యముగా గాని,
గద్యముగా గాని వ్రాయుము.

(4) మాతృకల్లోలేని విషయములు కొన్ని యామనార్థ్యనిగుట్టించి రాయలువ్రాసిరి. అవిఏవి ?

(5) సుగాత్ర పాతివ్రత్యగుణమునువర్ణించుము.

(6) సింహవృషభములమైత్రిని జంబుక మెట్లుచెఱచెను.

V వీనిలో నేయొదింటికైనను సందర్భములవ్రాసి, భావములనువివరించుము

1. “ఆహారదోషంబువిజ్ఞాననాశంబునకుమూలంబు”

2. “సజ్జనులగోష్ఠియిహపరసాధనంబు”

3. “సిరిరామోకాలాడ్డినకరణి”

4. “ఏకమేవాద్వితీయంబ్రహ్మ”

5. “ముందుచోటు చూచి పాదముమోపిక దావెనుకటిపాదమెత్తవలెను ?”

6. “ఇంతసంపాదించితి నింకేలయని తనియరాదు”

7. “అనుభూలదాంభత్యమందలిప్రేమాతికయఘట్టిద”

8. “ఈకొత్తిని బంధించి నిశ్చలముగనిలుపుటకష్టసాధ్యము”

VI (a) ఈ పద్యములలోనేదేని యొక దానికేఁ బ్రతిపదార్థమువ్రాసి, మఱియొక దానికేఁదాత్పర్యము వ్రాయుము.

1. ఆయతయుష్మదాకృతీకరాగ్రనగాంచలవాంతవారిధా

రాయుతచంద్రకాంతఫలకావళిబింబితమైచెలంగ, నా

గాయణమూర్తిఘట్కవచరత్నముచేబరిరక్షణగాంచెనా

నోయదువీర, వృష్టిబసినూటడఁబ్రోవవెసప్తరాత్రముల్.

2. చిలువలతేనిమైయనెగు సెజ్జనుమించినమంచుగొండవై

నలిఁబోలుపొందుకొమ్మగులునాడగుచాపనమేనినిద్దపుం

జెలువునమీఱుకుందనపుఁజేలమెఱుంగుననొప్పవెన్నునిం

గఱుములచానగేస్తుఁగనికన్నలనీ రొలుకంగమొక్కచుక.

(b) 1. వీనిలో నాలుగుపదములకు తతస్పములవ్రాయుము.

మలలమ్మ, బాగిలము, మున్నీరు, చిందము, కడకడలి, గ్రేడు.

2. వీనిలో నాలుగింటికి నచ్చతెనుఁగుపదముల వ్రాయుము—
అస్త్రాద్రి, మదగజము, చంద్రహాళి, సరస్వతి, అంధకారము,
పీతాంబురుఁడు.

(c) 1. నీతిచంద్రికలోని పశుపక్ష్యాదుల పేర్లు సార్థకములని నిరూపించు
టకు రెండుదాహరణములనిమ్ము.

2. “తప్పకయిచ్చున్విప్పుగ మెచ్చుందను నటుఘాగడఁగఁదడవెవ్వరి
కిఁ.”

ఇదియేవృత్తపాదము ? లేదేని

స్థర, తోదకములలో నొకదానికెలక్షణలక్ష్యములను వ్రాయుము.

3. ఉత్పేక్ష, ఆతిశయోక్తి-వీనికుదాహరణములనిమ్ము. లేక
స్వభావోక్త్యలంకారములలోఁ జేర్పనగు నాయనిచర్చించుము.

(d) ఈవాక్యములను తెలుఁగుసాంప్రదాయము ననుసరించినవరించి
వ్రాయుము.—

1. అదియొక పెట్టెయనిపిలువఁబడుచున్నది.
2. పాలు, లేక, గంజి యఱోగి త్రాగవలెను.
3. ఈపుస్తకము వావిల్లవారివలనబ్రకటింపఁబడినది.
4. బ్రాహ్మలు తమ కర్మలఁజేయకుంజేనరకానగూలుతారు.
5. ఇట్లనేప్రతివారును తమవద్దనున్న తలంపులనువిడచుకొవలసినది.
6. అపుడ యీశ్వరకృపకలితతోడ్పాటుచేమనమనో భీష్టములన్నీ
తొలఁగును.

ANNAMALAI UNIVERSITY

B.A. and B.Sc. Degree Examinations, March 1936.

PART II.

Telugu Composition and Translation.

26th MARCH, 1936.]

[2 P.M. TO 5 P.M.]

I. Translate into Telugu :—

For the success of any industry in our times, organisation is indispensable. It has become the key-stone of modern methods of production. It is hardly any exaggeration, however, to say that agriculture in India is not yet organized. If there is any organization at all, there is an organization of middle men who buy off the cultivator's produce long before it is actually harvested both for internal consumption and for export. In the past every village in India was economically self-contained. That earlier rural organization has been subjected to changes. Our primary need in the matter of agricultural policy is the need for organization directed and controlled by the consideration of the general welfare of the people adjusted to what the country requires in the shape of necessaries and raw materials. Even a country like Great Britain has now been forced to activities of a far-reaching character for the promotion of agricultural research and into a policy of making advances of working capital to farmers and of providing facilities for marketing agricultural produce. If Great Britain with its favourable conditions recognizes to-day the advisability of organization controlled by a social purpose what shall we say about the need for organization in India with a population predominantly agricultural, with a peasantry illiterate and resourceless.

II. Write an essay not exceeding three pages on any one of the following :—

1. ఉదయాదిత్యునిశీలము.

2. సాతవాహనుని వృత్తాంతము.

III. Write an essay not exceeding three pages on any one of the following :—

1. యుద్ధములు వాని ఆపుదల.

Wars and how to avoid them.

2. స్వేచ్ఛాస్వేరములు.

License and Liberty.

3. దేశ చరిత్రపఠనవలనిలాభములు.

The advantages of reading History.

4. నాటకములయందు సంగీతము, పద్యములెంతవఱకవసరములు.

The place of poetry and music in a drama.

ANNAMALAI UNIVERSITY

B. A. Degree Examination, 1936

FRIDAY, 27TH MARCH]

[10 A.M. TO 1 P.M.

PART III

ENGLISH

SHAKESPEARE

[The *first* question carries 28 marks ; the others 18 each.]

I. Annotate *six* of the following passages choosing three from each of the groups A and B :—

A

- (a) Yet do I hold it very stuff o' the consci-
To do no contrived murder. [ence,
- (b) For if such actions may have passage
[free,
Bond slaves and pagans shall our states-
[men be.
- (c) One that excels the quirks of blazoning
[pens,
And in the essential vesture of creation
Does tire the ingener.
- (d) If I do prove her haggard,
Though that her jesses were my dear
[heart strings,
I'd whistle her off and let her down the
To prey at fortune. [wind
- (e) Unkindness may do much ;
And his unkindness may defeat my life,
But never taint my love.
- (f) Of one whose hand,
Like the base Indian, threw a pearl away
Richer than all his tribe.

B

(a) You speak a language that I understand
[not :

My life stands in the level of your dreams,
Which I'll lay down.

(b) Dreams are toys :
Yet for this once, yea, superstitiously,
I will be squared by this.

(c) I have drunk, and seen the spider.

(d) I know this man well : he hath since
been an ape bearer ; then a process-server, a bailiff,
then he compassed a motion of the Prodigal Son.

(e) Methinks I play as I have seen them do
In Whitsun pastorals.

(f) A piece many years in doing and now
newly performed by that rare Italian master, Julio
Romano.

II. Answer one of the following :—

(a) Shakespeare's use of the Chorus in his plays.

(b) From either of the prescribed plays,
illustrate Shakespeare's method of handling his sources.

(c) "Shakespeare is careless of construction."
Consider this criticism with reference to the prescribed
plays.

III. Answer one of the following :—

(a) How far does Shakespeare succeed in
harmonising tragic and romantic motives in *The
Winter's Tale* ?

(b) Consider Shakespeare's attitude towards
shepherd life and pastoral sentiment as shown in *The
Winter's Tale*.

(c) How far do you agree with the statement
that "in *Othello*, Chance or Unreason is at the centre
of human life."

IV. Answer one of the following :—

(a) “ Nothing she does or says but smacks of something greater than herself—too noble for this place.”—Justify this estimate of Perdita.

(b) Explain the part played by Paulina in the development and unravelling of the plot in *The Winter's Tale*.

(c) Of Autolycus it is said “ he has something of the wit of Touchstone, and much of the tunefulness of Feste, and for him as for Falstaff the folly of other men is both meat and drink.”—Discuss.

V. Answer *one* of the following :—

(a) “ Desdemona is frank, and bold and firm, not a girl, but a steadfast, clear-eyed woman.”—Discuss.

(b) “ Iago's villainy is motiveless.”—Discuss.

(c) “ To one of Othello's character the death of Desdemona was a necessary sacrifice.”—Discuss.



ANNAMALAI UNIVERSITY

B. A. Degree Examination, 1936

SATURDAY, 28TH MARCH]

[10 A.M. to 1 P.M.]

PART III

ENGLISH

MODERN POETRY

[The *first* question carries 28 marks; each of the others 18.]

I. Annotate *six* of the following:—

- (a) So clomb this first grand thief into God's fold:
So since into his Church lewd hirelings climb.
- (b) Whether the prime orb,
Incredible how swift, had thither rolled
Diurnal, or this less volubil earth,
By shorter flight to the east, had left him there.
- (c) The peer now spreads the glittering forfex wide,
To inclose the lock; now joins it to divide.....
The meeting points the sacred hair dissever
From the fair head, for ever and for ever!
- (d) This Partridge soon shall view in cloudless skies,
When next he looks through Galileo's eyes.
- (e) Thou Eye among the blind,
That, deaf and silent, read'st the eternal deep.
- (f) Not for these I raise
The song of thanks and praise;
But for those obstinate questionings
Of sense and outward things.
- (g) And there I shut her wild, wild eyes
With kisses four.
- (h) Or like stout Cortez when with eagle eyes
He stared at the Pacific.

- (i) What though, about thy rim,
Skull-things in order grim
Grow out, in graver mood, obey the sterner stress.

II. Attempt *one* of the following :—

(a) Write short notes on *three* of the following :—Book I of *Paradise Lost*, *Samson Agonistes*, *The Epistle to Arbuthnot*, *The Ode to Duty*, *Isabella*, *Saul*, *Abt Vogler*.

(b) Contrast the “classicism” of Milton with that of Pope.

(c) Compare Wordsworth and Keats as writers of odes.

III. Attempt *one* of the following :—

(a) Give an account of the character of Satan, as revealed in Book IV.

(b) Illustrate from Book IV the qualities of Milton’s style and versification.

(c) Discuss the relative merits of the narrative and descriptive elements in Book IV.

IV. Attempt *one* of the following :—

(a) Discuss the merits and defects of the supernatural “machinery” in *The Rape of the Lock*.

(b) Consider *The Rape of the Lock* as a mock-heroic poem.

(c) In what ways can *The Rape of the Lock* be considered “the representative poem of the age”?

V. Attempt *one* of the following :—

(a) Trace the evolution of the thought in the *Immortality Ode*.

(b) Consider the *Immortality Ode* (1) as an autobiographical poem, and (2) as a philosophical poem.

(c) Contrast the *Immortality* Ode and *Rabbi Ben Ezra* (1) with reference to their poetic quality, and (2) with reference to their philosophic teaching.

VI. Attempt *one* of the following :—

(a) “The *Nightingale* Ode has a higher, richer, more complex beauty; but the *Autumn* is the more nearly perfect.”—Justify.

(b) What is meant by the “sensuousness” of Keats?

(c) Illustrate the harshness and obscurity of Browning’s style.

ANNAMALAI UNIVERSITY

B. A. Degree Examination, 1936

MONDAY, 30TH MARCH]

[10 A.M. TO 1 P.M.

PART III

ENGLISH

MODERN PROSE

[The last question carries 28 marks; the others 18 each.]

I. Answer *one* of the following:—

(a) “Dryden was the principal figure and agent in the formation of standard English Prose, the conscious work of the age.”—Discuss.

(b) “Gibbon has monopolised the historical genius and the historical learning of a whole generation.”—Illustrate with special reference to the age of the Antonines.

(c) “The mere egotism of the author, freely confessed or subtly dissembled, forms the chief delight of the English essay.”—Examine this statement with reference to the prescribed essays.

II. Answer *one* of the following:—

(a) “The ‘Essay on Dramatic Poesy’ shows the breadth of Dryden’s mind better perhaps than any other one piece of his writing.”—Discuss.

(b) Summarise the views expressed by Dryden on (1) Beaumont and Fletcher, (2) Shakespeare.

(c) What are Dryden’s views on Tragi-comedy?

III. Answer *one* of the following:—

(a) How does Gibbon prove that “the firm edifice of Roman power was raised and preserved by the wisdom of ages”?

(b) Speaking of Augustus, Gibbon says: "According to the various dictates of his interest, he was at first the enemy and at last the father of the Roman world."—Comment on this statement.

(c) What, according to Gibbon, was the policy of the Antonines towards the Provincials? What were the consequences of it?

IV. Answer *one* of the following:—

(a) State and discuss Priestley's view of the character of Sir Toby Belch.

(b) How does Lynd prove that "Johnson is in the best sense of the word all the more comic a figure because he is so tragic"?

(c) "Thackeray is largely responsible for the awe-struck and over-lurid tone in which Swift was so long spoken of."—Comment.

(d) "Thackeray is full of prejudices."—Illustrate from *The English Humourists*.

V. Annotate *six* of the following, choosing *three* from each of the groups A and B.

A

(a) He needed not the spectacles of books to read nature; he looked inwards and found her there.

(b) Thus in two hours and a half we run through all the fits of Bedlam.

(c) Ovid's fancy was not limited by verse, and Virgil needed not verse to have bounded him.

(d) Phoenicia and Palestine will for ever live in the memory of mankind; since America as well as Europe have received letters from the one and religion from the other.

(e) The zeal of fanaticism prevailed over the cold and feeble efforts of policy.

(f) But his life was the noblest commentary on the precepts of Zeno.

B

(a) The giants must live apart. The Kings can have no company.

(b) To be the most beloved of English writers !
What a title that is for a man.

(c) The Congreve Muse is dead, and her song choked in Time's ashes.

(d) Corruption's Nuncio, we might call him, thinking of his sins and splendours, his meanness and magniloquence.

(e) Malvolio, we may say, has been steadily coming into his own for a long time, so that it is difficult for us to regard him as an unpleasant oddity, as Shakespeare did.

(f) No man lives in the external truth, among salts and acids, but in the warm, phantasmagoric chamber of his brain, with the painted windows and the storied walls.



ANNAMALAI UNIVERSITY

B. A. Degree Examination, 1936

TUESDAY, 31ST MARCH]

[10 A.M. TO 1 P.M.

PART III

ENGLISH

FORM OF LITERATURE (TRAGEDY)

[Answer *one* question from *each* of the groups A, B, C, D and E. All questions carry equal marks.]

A

I. Discuss Aristotle's view of the function of tragedy.

II. "The spirit of the chorus, that of which it was the expression, is a permanent thing, well-nigh necessary in all high tragedy, but the form of the Greek chorus is purely temporary and topical."—Explain.

III. Examine Aristotle's view that plot is 'the first essential, the life and soul of tragedy' and that character should come second.

B

I. How far does Sophocles's *Œdipus* illustrate Aristotle's remarks on the tragic hero?

II. "As a tragic motive expectation is more effective than surprise."—Examine this statement in relation to *Œdipus*.

III. In *Œdipus* "fate appears above the stage like a fourth actor, playing a principal part, cheating, deceiving, betraying, watching with a grim smile the blundering actions of the miserable king."—Consider the truth of this statement.

[T. O.]

C

I. "Romantic tragedy is the very opposite of classical."—Examine this view with reference to action, character and construction.

II. "Horror arising from situation and incident dominates *The Duchess of Malfi*."—Explain.

III. "Tragedy in its most perfect form is poetical: the greatest tragic works are poems."—How far is this true of *The Duchess of Malfi*?

D

I. "Ibsen's tragic drama is of a different type from Webster's."—Bring out the differences between the types.

II. How far is Nora herself responsible for her tragedy?

III. Compare the ending of *Othello* with that of *A Doll's House* and examine how far their difference is due to the difference between the dramatists' conception of character.

E

I. "*Saint Joan* is a play, not of persons, but of ideas."—Discuss.

II. "The poetic form is well nigh of the essence of tragedy."—How far has the absence of poetic form affected *A Doll's House* and *Saint Joan*?

III. What objects does Shaw profess to set before himself in writing *Saint Joan*? Consider how far he has attained them.

ANNAMALAI UNIVERSITY

B. A. Degree Examination, 1936

FRIDAY, 27TH MARCH]

[10 A.M. TO 1 P.M.

PART III

PHILOSOPHY

PSYCHOLOGY

[Attempt *six* questions.]

Maximum marks: 100

I. From what sources and by what methods are the data of psychology obtained?

II. Summarise the facts of brain localisation, with the aid of a diagram. What light do they throw on the relation of mind-body?

III. Describe the physiological factors involved in the visual perception of depth.

IV. What are the general conditions under which we feel pleasure? Is there a neutral feeling tone?

V. Examine the process by which manual dexterity is acquired. Show how the nature and direction of attention alter during the process of acquisition.

VI. Analyse any one emotion and discuss its relation to conative processes.

VII. Describe the changes that take place in learned material with lapse of time.

VIII. What are the psychological conditions that determine volition?

IX. Distinguish between individual and group mental tests, and indicate their relative uses.

ANNAMALAI UNIVERSITY

B. A. Degree Examination, 1936

SATURDAY, 28TH MARCH]

[10 A.M. TO 1 P.M.

PART III

PHILOSOPHY

ETHICS

[Attempt *six* questions.]

Maximum marks: 100

1. 'The chief object of ethics is the determination of the Chief Good.' 'The object of ethics is to tell us what to do.'—Discuss.

2. Discuss the view that the ethical value of an act depends on its consequences.

3. Is the 'objectivity' of moral judgments compatible with the wide differences of opinion that exist as to what is right, especially between people belonging to different social orders and civilisations?

4. Consider the meaning and the value of Kant's conception of a kingdom of ends.

5. What is meant by the distinction between 'higher' and 'lower' kinds of pleasure? Can an ethical hedonist consistently admit this distinction?

6. Can the conception of self-realisation as the moral end be rightly regarded as egoistic?

7. What is meant by acting justly? Can it ever be right to do what is unjust?

8. Examine the contention that science grows, but morality remains stationary.

9. 'The good man is a good citizen.' 'Morality seems to begin where politics ends.'—Discuss.

ANNAMALAI UNIVERSITY

B. A. Degree Examination, 1936

MONDAY, 30TH MARCH]

[10 A.M. TO 1 P.M.

PART III

PHILOSOPHY

OUTLINES OF INDIAN PHILOSOPHY

[Only *six* questions to be attempted]

Maximum marks: 100

I. "The Bauddha, Lokāyata, and Ārhata systems which reject the validity of the Vedas should be refuted by the upholders of the authority of the Vedas with the aid of reason."—Briefly sum up the basic doctrines of any *one* of them and state how they are refuted.

II. What is a "Pramāna"? State and discuss the scheme of Pramānas in either the Nyāya Vaiseshika or the Mimāmsā.

III. Briefly explain and illustrate "Vidhi", "Artha-vāda", "Mantra" and "Nāmadheya."

IV. What are the "Tattvas" (basic entities) admitted by Sāṅkhya? Critically examine the Sāṅkhya conception of Final Release.

V. Explain and illustrate the "Siddhies". (Supernatural powers and achievements) of Yoga.

VI. Is there any philosophical justification for an independent system like that of Vedavyāsa? Discuss.

VII. What is the doctrine of "Kosas" (folds or envelopes)? What use does Vedānta make of it?

VIII. Write a brief critical account of the Advaita view of Moksha. (Final Release.)

IX. From your knowledge of the different systems, (Siddhantas) carefully consider whether they must for ever remain in opposition or they can be interpreted to be complements of one another.

ANNAMALAI UNIVERSITY

B. A. Degree Examination, 1936

TUESDAY, 31ST MARCH]

[10 A.M. TO 1 P.M.

PART III

PHILOSOPHY

GENERAL PHILOSOPHY

[Only six questions to be attempted]

[Maximum marks: 100

I. "The general standpoint of the book is, I suppose, realistic, and pluralistic,...theistic, certainly idealistic, and quite unmistakably optimistic."—Examine critically this confession of faith by Patrick.

II. Write a critical account of *Space and Time*, and discuss if they are mere appearances.

III. Discuss fully whether the world-process is teleological.

IV. How does Patrick propose to solve the problem of the existence of God? Discuss if there is any philosophical need or justification for God in monistic systems.

V. "The issue Pessimism *versus* Optimism is philosophically spurious. Free-willed man brings Evil on himself and enjoys Good as the case may be."—Examine critically with reference to Sankhya Pessimism and European Pessimism.

VI. Examine the claim that Monism is the only rational theory of reality.

[T. O.

VII. With what success has Patrick solved the problem of the One and the Many?

VIII. Expound what you consider to be the most adequate Theory of Knowledge, and explain why.

IX. What according to Patrick is the goal of life? Does life lived in contemplation of Truth, Beauty, and Goodness, guarantee salvation from cycles of births and deaths? Briefly discuss.

ANNAMALAI UNIVERSITY

B.A. Degree Examination, 1936

FRIDAY, 27TH MARCH]

[10 A.M. TO 1 P.M.

PART III

HISTORY OF INDIA

[Answer *Five* questions, not more than *Two* from any one part.]

A

I. Describe the social and political organisation of Rig-Vedic India.

II. Examine the causes that favoured the rise of Jainism and Buddhism.

III. Give a sketch of the Mauryan Administrative System.

IV. Trace the career of Harshavardhana and examine his claims to statesmanship.

V. Sketch the history of the Hoysalas and estimate their services to art.

B

VI. Sketch the history of the reign of Firōz Shah Tughlak and account for the decay of the Sultanate after him.

VII. Give an account of Sher Shah's administrative reforms, and indicate how far they anticipated those of Akbar.

VIII. Give some account of Vijayanagar under Krishna Deva Rāya.

IX. Examine the political soundness of the Dekkan policy of Aurangzeb.

[T. O.]

C

X. Trace the course of the struggle for power between the English and the French in South India, and account for the success of the former.

XI. Give an account of the reforms of Lord Cornwallis.

XII. Show how the Marquess of Hastings paved the way for an era of peace and prosperity in British India.

XIII. Describe briefly the changes in the constitution of the Government of India from 1858 to 1921.

ANNAMALAI UNIVERSITY

B.A. Degree Examination, 1936

SATURDAY, 28TH MARCH]

[10 A.M. TO 1 P.M.

PART III

EUROPEAN HISTORY

[Answer *five* questions only.]

I. Explain the influence of the maritime discoveries of the 15th century on the history of Europe.

II. In what parts of Europe and by what means did the Catholic Church manage to maintain its supremacy after the Reformation?

III. Indicate the importance of the reign of Henry IV in the history of France.

IV. How far was Charles XII responsible for the collapse of the Swedish Empire?

V. Account for the decline of Ottoman power in Europe in the 17th and 18th Centuries.

VI. What is meant by the Balance of Power? How was this principle utilized in overcoming the menace to Europe by Louis XIV and Napoleon?

VII. "The growth of Prussia was the result of a continuous policy of aggression." Explain and illustrate.

VIII. Why has the period 1830—1848 been described as the era of revolutions?

IX. Estimate the services of Bismarck to the cause of German unity.

X. What were the changes made in the map of Europe by the Treaty of Versailles and why?

ANNAMALAI UNIVERSITY

B. A. Degree Examination, 1936

MONDAY, 30TH MARCH]

[10 A.M. TO 1 P.M.

PART III

POLITICAL SCIENCE

[N.B.—Answer Question I and any *FOUR* of the others.]

I. Comment with reference to the context on any *three* of the following :—

(a) “The circumstances are what render every civil and political scheme beneficial or noxious to mankind.”

(b) “In this partnership all men have equal rights, but not to equal things.”

(c) “The science of constructing a commonwealth, or renovating it, or reforming it, is like every other experimental science not to be taught *a priori*.”

(d) “I reprobate no form of government merely on abstract principles.”

(e) “I believe that, were Rousseau alive and in one of his lucid intervals, he would be shocked at the practical frenzy of his scholars.”

(f) “The very inequality of representation, which is so foolishly complained of, is perhaps the very thing which prevents us from thinking or acting as members for districts.”

II. What theory of individual rights could you deduce from Burke’s “Reflections on the Revolution”?

III. “The Nation-State itself is an inherent absurdity.” Discuss.

[T. O.]

IV. Point out the merits and defects of City State democracy.

V. Describe the main differences, in regard to composition and powers, between the House of Lords and the Senate of the United States.

VI. On what principles has the question of the distribution of powers between the Federal Government and the part states been settled (a) in the United States, (b) in Canada? Which model do you consider preferable for India?

VII. Outline briefly the considerations that should guide us in deciding whether a given function is within the province of the State.

VIII. Give some account of the main forms of Socialism prevalent in the Post-war period.

IX. Explain with examples the distinction between rigid and flexible constitutions.

ANNAMALAI UNIVERSITY

B.A. Degree Examination, 1936

TUESDAY, 31ST MARCH]

[10 A.M. TO 1 P.M.

PART III

CONSTITUTIONAL HISTORY OF GREAT BRITAIN AND IRELAND FROM 1485.

[Answer any *five* questions.]

I. Explain how the power of the Crown under the Tudors "acquired dangerous proportions, but was usually exercised with discretion."

II. Describe the constitutional legislation of the Long Parliament. Why did it not finally solve the issues between King and Parliament?

III. Examine the statement that the Revolution of 1688 was Parliamentary and liberal, but not democratic.

IV. How was the liberty of the subject safeguarded in the 17th and 18th centuries?

V. Trace the development of the office of Prime Minister. What is his relation to the King?

VI. Sketch the different stages in the removal of the disqualifications attaching to the Roman Catholics and the Protestant Non-Conformists.

VII. Outline the history of Parliamentary and electoral reform from 1885 to the present day.

VIII. How far is the claim of Parliament to control the Ministers of the Crown effective at the present time?

IX. What are meant by the "Conventions of the Constitution"? Explain the sanction that enforces them.

ANNAMALAI UNIVERSITY

B. A. Degree Examination, 1936

WEDNESDAY, 1ST APRIL]

[10 A.M. TO 1 P.M.

PART IV

ECONOMICS I

[Answer any *five* questions.]

1. "Economics deals with means, the study of ends lies outside its scope."—Is this a correct estimate of the scope of your study?

2. Bring out the economic importance of the conceptions of Producers' Surplus and Consumers' Surplus.

3. Show that the Law of Diminishing Returns is applicable to everything that possesses value but that it has peculiar consequences when applied to land.

4. Account for the dearth of Industrial Capital in India.

5. What are the essential features of Rationalisation of industry? What advantages are claimed for it?

6. Explain the relation between utility, cost and value in the 'short' and the 'long' periods of time.

7. What do you understand by Joint Supply? How will value be affected by an increase in the demand for one of the commodities produced under conditions of Joint Supply?

[T. O.]

8. How far is it true to say that the theory of payment made for any one agent in production is, in essentials, the same as the theory of payment for any other agent of production?

9. **What is Economic Rent?** How far will the rent of agricultural lands be affected by (a) improvements in the art of cultivation, (b) a reduction in the cost of transport, and (c) a fall in the price of agricultural produce?

10. Bring out the importance of the conception of Elasticity of Supply in economics.

ANNAMALAI UNIVERSITY

B. A. Degree Examination, 1936

THURSDAY, 2ND APRIL]

[10 A.M. TO 1 P.M.

PART IV

ECONOMICS II

[Answer any *five* questions.]

1. Is a metallic basis for paper currency necessary?

2. Define Bimetallism. What are its advantages and how far does monetary history corroborate the arguments of bimetallists?

3. Indicate the special character of the Reserve Bank of India in relation to the general banking system of the country.

4. What is meant by an over-issue of paper money? How is the fact of such over-issue revealed?

5. What facilities are available for long-term credit in India?

6. Examine the merits of the following arguments in favour of protection :—

(a) Diversification of industries,

(b) Infant Industry.

How far do these arguments apply to India?

7. "Imports are paid for by exports."—Discuss.

[T. O.]

8. Explain "equality of taxation." How have modern States attempted to secure this equality?

9. Indicate the main causes from which commercial crises arise, and show the part which banks play in such crises.

10. Write notes on any three of the following:—

- (a) Specie points.
 - (b) Sinking Fund.
 - (c) Bounties on production.
 - (d) Re-discounting.
-

ANNAMALAI UNIVERSITY

B. A. Degree Examination, 1936

SATURDAY, 4TH APRIL]

[10 A.M. TO 1 P.M.

PART IV

ECONOMIC HISTORY OF ENGLAND AND
INDIA SINCE 1700 A.D.

[Answer *five* questions, not more than *three* from each part.]

A

1. Describe the leading features of the Industrial Revolution in England. How far does the term correctly signify the changes so designated?

2. Give some account of the changes in agricultural technique from the latter part of the eighteenth century to 1850.

3. Estimate the influence of the doctrine of 'Laissez faire' on the development of Economic Policy in the eighteenth century.

4. Trace the development of the Labour movement in England between 1848 and 1900, clearly bringing out its main features.

5. Explain the chief forms of social insurance adopted in Great Britain.

B

6. Trace the history of Imperial Preference in India.

[T. O.]

7. Explain the influence of the various factors which contributed to the decline in the nineteenth century of the chief Indian handicraft industries.

8. Sketch the growth of the Cotton industry in India, and discuss its present position.

9. Trace the development of the ryotwari tenure in the Madras Presidency, and mention its main features.

10. Give an account of the rise and progress of Trade Unionism in India.

ANNAMALAI UNIVERSITY

B. A. Degree Examination, 1936

MONDAY, 6TH APRIL]

[10 A.M. TO 1 P.M.

PART IV

CO-OPERATION AND RURAL ECONOMICS

[Answer any *five* questions.]

1. Classify and explain the principal land tenures of India.

2. Explain the part played by the middleman in the marketing of produce. To what extent can a co-operative society displace him ?

3. Discuss the expediency of the commercialisation of agriculture in India.

4. Examine the case for a Debt Conciliation Scheme in the Madras Presidency.

5. Explain the distinguishing features of co-operation in Denmark. What are the lessons of Danish co-operation for India ?

6. Describe the effects of the growth of communications in India upon the prices of her agricultural produce.

7. "A joint stock company is a union of capitals. A co-operative society is a union of persons."—Discuss.

8. Give an account of the constitution and working of *any one* of the Provincial Co-operative Apex Banks of India.

9. Explain the principles of the Rochdale system. To what extent are they observed in the co-operative stores of India ?

10. Examine the possibilities of improving the condition of rural population in India by the establishment of rural industries.

ANNAMALAI UNIVERSITY

B. Sc. Degree Examination, 1936

FRIDAY, 27TH MARCH]

[10 A.M. TO 1 P.M.

PART III

ALGEBRA, TRIGONOMETRY AND THEORY
OF EQUATIONS

I. What is meant by the notation

$$\lim_{n \rightarrow \infty} a_n = l$$

Show that

$$\lim_{n \rightarrow \infty} x^n = 0 \quad (0 < x < 1),$$
$$\lim_{n \rightarrow \infty} \frac{x^n}{\sqrt[n]{n}} = 0 \text{ for any real } x.$$

Test for convergence, the series

$$\sum_{n=1}^{\infty} \frac{\cos n \theta}{n^2} \quad (\theta \text{ real})$$

II. If $a_1, \dots, a_n \geq 0$ show that

$$\frac{a_1 + \dots + a_n}{n} \geq \sqrt[n]{a_1 a_2 \dots a_n}$$

Find the maximum value of $x_1 x_2^2 x_3^3 x_4^4$ subject to $x_1 + x_2 + x_3 + x_4 = 1$.

III. Split into real partial fractions

$$\frac{x^2 + 2}{(x+1)^2(x+2)(x+3)}; \frac{1}{x^4 + x^2 + 1}.$$

Find the expansion in ascending powers of x for the first of these expressions. For what values of x is the expansion valid?

IV. Sum the series

$$(i) \quad \frac{1}{2} - \frac{2}{3} + \frac{3}{4} - + \dots \text{ad inf.}$$

$$(ii) \quad \frac{1}{7} + \frac{1}{2} \left(\frac{1}{7} \right)^2 + \frac{1}{3} \left(\frac{1}{7} \right)^3 + \dots \text{ad inf.}$$

$$(iii) \quad \sum_{n=0}^{\infty} \frac{(-1)^n}{2n+1}.$$

How many terms of the series

$$1 + \frac{1}{1} + \frac{1}{2} + \frac{1}{3} + \dots$$

are necessary to give an approximation to e correct to 7 decimal places?

V. (i) Solve, by means of determinants, the system of equations

$$a_1x + b_1y + c_1z = d_1,$$

$$a_2x + b_2y + c_2z = d_2,$$

$$a_3x + b_3y + c_3z = d_3.$$

(ii) Calculate the determinant

$$\begin{vmatrix} 1 & 2 & 3 & 4 \\ 2 & 3 & 4 & 1 \\ 3 & 4 & 1 & 2 \\ 4 & 1 & 2 & 3 \end{vmatrix}$$

VI. (i) Find the area of a regular polygon of n sides inscribed in a circle of radius r . Deduce that the area of this circle is πr^2 .

(ii) Show that

$$1 + 2 \cos 2x + 2 \cos 4x + \dots + 2 \cos 2nx = \frac{\sin (2n+1)x}{\sin x}.$$

VII. (i) Show how to express the number $a+bi$ (a, b real) in the form $re^{i\theta}$ ($r > 0, 0 \leq \theta < 2\pi$). In how many ways can this be done?

(ii) Calculate the cube roots of $1+i$ and mark them off on an Argand diagram.

VIII. (i) If α, β, γ are the roots of $x^3 + qx + r = 0$ find the equation whose roots are

$$(\alpha - \beta)^2, (\beta - \gamma)^2, (\gamma - \alpha)^2.$$

(ii) Find the real root of

$$x^3 - 3 = 0$$

correct to 3 decimal places.

ANNAMALAI UNIVERSITY

B. Sc. Degree Examination, 1936

SATURDAY, 28TH MARCH]

[10 A.M. TO 1 P.M.

PART III

ANALYTICAL GEOMETRY AND CALCULUS.

[About *four-fifths* of the paper will carry full marks.]

I. Show that by a proper choice of axes, the equation to a co-axial system of circles can be expressed in the form

$$x^2 + y^2 + 2kx + c = 0,$$

where k is a parameter.

Find the equation of the circle having as diameter the common chord of the two circles $x^2 + y^2 = 16$ and $x^2 + y^2 - 6x - 8y + 10 = 0$.

II. Show that the equation to the normal at a point of the parabola $y^2 = 4ax$ can be put in the form $y = mx - 2am - am^3$.

If a circle be drawn through the feet of the normals to a parabola from a point P, prove that it will pass through the vertex.

III. Find the equation of the chord joining the points $\left(ct_1, \frac{c}{t_1}\right)$ and $\left(ct_2, \frac{c}{t_2}\right)$ of the rectangular hyperbola $xy = c^2$.

A circle cuts a rectangular hyperbola in A, B, C and D; if H is the orthocentre of the triangle ABC, prove that D and H are the ends of a diameter of the rectangular hyperbola.

IV. Obtain an expression for the perpendicular distance of the point (x_1, y_1, z_1) from the plane

$$lx + my + nz + p = 0.$$

Find the equation of the sphere inscribed in the tetrahedron bounded by the planes $x = 0$, $y = 0$, $z = 0$ and $2x + 2y + z - 6 = 0$.

V. (1) Trace the conic

$$12x^2 - 12xy + 7y^2 + 36x - 10y - 17 = 0$$

(2) If $u = \sin^{-1}(x/y) + \tan^{-1}(y/x)$ prove that

$$x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y} = 0.$$

If $u = f(t)$, where $t = xy$ show that

$$x \frac{\partial u}{\partial x} = y \frac{\partial u}{\partial y}.$$

VI. (1) A basin is formed by the revolution of the curve $x^3 = 64y$, ($y > 0$) about the axis of y . If the depth of the basin is 8 inches, how many cubic inches of water will it hold?

(2) If $y = f(x) = a + bx + cx^2$, $y_1 = f(p)$, $y_2 = f(p + h)$ and $y_3 = f(p + 2h)$, prove that

$$\int_p^{p+2h} f(x) dx = \frac{h}{3} (y_1 + y_3 + 4y_2)$$

Hence obtain an approximate value of

$$\int_0^{.2} (1 - 2x^2)^{1/3} dx.$$

VII. Show that ρ , the radius of curvature at any point of a plane curve, is given by the formula

$$\rho = \frac{\left\{ 1 + \left(\frac{dy}{dx} \right)^2 \right\}^{3/2}}{\frac{d^2y}{dx^2}}$$

For the rectangular hyperbola $xy = k^2$, prove that

$$\rho = \frac{r^3}{2k^2},$$

r being the central radius vector of the point considered.

VIII. (1) State Taylor's theorem and apply it to express $\sin\left(\frac{\pi}{4} + \theta\right)$ in a series of powers of θ .

(2) If $u_n = \int_0^a x^n e^{-x} dx$, where n is a positive

integer, prove that

$$u_n - (n + a) u_{n-1} + a(n - 1) u_{n-2} = 0.$$

(3) Integrate

$$\int \frac{dx}{\sqrt{(1-x^2)\sin^{-1}x}}$$

IX. (1) Form the differential equation of all circles which pass through the origin and whose centres are on the x -axis.

(2) Solve the differential equation

$$y - x \frac{dy}{dx} = a\left(y^2 + \frac{dy}{dx}\right).$$

ANNAMALAI UNIVERSITY

B. Sc. and B. Sc. (Hons.) Subsidiary, 1936

MONDAY, 30TH MARCH]

[10 A.M. TO 1 P.M.

PART III

MECHANICS AND ASTRONOMY

[N.B.—Full marks will be awarded for answering about *three-fourths* of the paper.]

I. Find the conditions of equilibrium of a body acted on by a system of coplanar forces.

Weights W, w, W are attached to points B, C, D respectively, of a light string AE, where B, C, D divide the string into four equal lengths. If the string hangs in the form of four consecutive sides of a regular octagon, with the ends A and E attached to points on the same level, show that $W = (\sqrt{2} + 1)w$.

II. Given the centres of gravity of a whole body, and of a part of it, find the C. G. of the remainder.

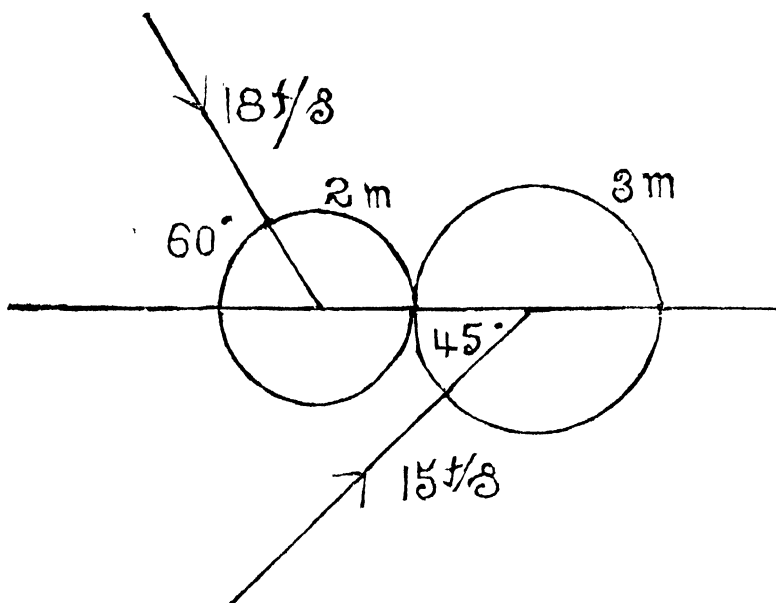
A cubical block of iron, edge 10 cms. has a piece removed measuring 6 cms. by 6 cms. by 8 cms. so as to leave an open box, with sides and bottom 2 cms. thick. Find the C. G. of the box.

III. (1) The arms of a common balance are unequal, as also their weights, and those of the scale-pans. An article appears to weigh 250 lbs. or 169 lbs. and another 200 lbs. or 137 lbs. according as they are put in the one pan, or the other. Find the true weight of an article which would appear to weigh the same in both pans.

(2) Find the work done in stretching an elastic string.

IV. Enunciate the three laws of oblique impact.

Two smooth elastic balls of masses $2m$ and $3m$ respectively are moving with velocities 18 ft. and 15 ft. per second, one following the other, making angles of 60° and 45° with the line of centres, on opposite sides. If the coefficient of restitution be $\frac{2}{3}$, find the motion after impact, and the loss of kinetic energy.



V. State Newton's Second Law of Motion, and derive $P = Mf$.

If an engine can draw a train of 200 tons weight at a maximum velocity of 35 miles an hour on the level, at what rate would it draw it up an incline of 1 in 80, frictional resistance being 12 lbs. weight per ton, in each case.

VI. Show that the kinetic energy of rotation of a rigid body round a fixed axis is $\frac{1}{2}MK^2\omega^2$.

A cord 10 feet long, is wrapped round the axle of a wheel and is pulled with a constant force equal to 50 lbs. weight, until all the cord is unwound. If the wheel is then rotating 100 times per minute, show that its moment of inertia is $90g/\pi^2$ in ft. lb. units.

VII. (1) Show that the orbital motion of the earth, with its polar axis inclined to the Ecliptic plane, accounts for the changes in the Sun's Right Ascension and Declination, day after day.

(2) At the Vernal Equinox, the star Spica is observed to culminate $1^h 20^m$ after midnight. At what time of the year will the star begin to appear as a morning star?

VIII. Given that the Moon's nodes have a retrograde motion of about $19^{\circ}21'$ per annum, find the period of their Synodic revolution.

Show that the maximum number of eclipses in a year is seven.

IX. Find a formula connecting the Synodic and Sidereal periods of a Superior Planet.

If the distance of a planet from the Sun be 16 times that of the earth, calculate the sidereal and synodic periods.

X. Account for the following :—

(1) Eclipses occur in an invariable order after a cycle of 18 yrs. 11 days.

(2) The Moon always presents the same face to an observer on the earth.

(3) The duration of twilight is much less in the Tropics than in higher latitudes.

(4) Meteoric showers are displayed at definite times of the year.

(5) The apparent motion of any planet, when nearest the Earth is always retrograde.

ANNAMALAI UNIVERSITY

B. Sc. Degree Examination, 1936

TUESDAY, 31ST MARCH]

[10 A.M. TO 1 P.M.

PART III

STATISTICS

[Only *two* questions to be attempted from Section B.]

Section A

I. (a) State the general objects of Statistical Science and indicate the nature of the methods it adopts.

(b) It is required to get an idea of the incidence and injurious effects of the various kinds of poxes on males and females at different ages and of the possible protective effects of inoculation. Draw the classified table according to which you will collect and arrange your numerical data.

II. Mention the different kinds of averages used in statistics and discuss their advantages and disadvantages.

Instance types of statistical problems in which (1) the geometric mean, (2) the harmonic mean, is specially suitable.

III. Define the 'standard deviation' and explain how it measures the 'dispersion' of a frequency-distribution.

What does the standard deviation indicate, when the frequency-distribution relates to the results of measurement subject to chance errors, of the same

object? Two marksmen A and B aim at a distant target. The deviations of their shots from the target are given by the following table.

Deviations in inches.

A	4	3	0	6	2	3.5	1	2	2.5	4
B	4	2	5	3	0	6	7	3	0	1

Give a plausible numerical estimate of the relative skill of the two marksmen.

- IV. Write short notes on two of the following:
 (1) The ogive curve, (2) the use of mortality tables,
 (3) The significance of the coefficient of correlation.

Section B

V. The average price of a certain commodity and the quantities sold at four different markets are given in the following table:—

Markets	Average price per unit	No. of units sold
A	Rs. 27-3	36,000
B	Rs. 28-8	1,000
C	Rs. 29-1	16,000
D	Rs. 27-2	12,000

Find the mean price for the four markets weighting each local average with the quantity sold.

Will it be possible for the average price at each of the four markets to rise from one year to the next and yet for the weighted mean price to fall? If so, under what conditions?

VI. Table of Double-entry giving Results of a survey of housing conditions in a city.

Number of persons per tenement	Number of Rooms per tenement									Total	Average number of rooms
	2	3	4	5	6	7	8	9	10		
1	26	9	8	5	1	4	1	1	1	56	3.5
2	14	24	60	40	29	9	8	3	4	191	4.8
3	5	24	61	57	34	11	8	3	5	208	5.0
4	4	16	57	44	27	16	3	2	10	179	5.2
5	3	18	36	42	21	6	5	5	12	148	5.3
6	2	8	21	43	19	4	5	3	7	112	5.4
7		5	18	14	11	5	3	2	4	62	5.5
8		1	14	11	10		2	2	4	44	5.7
Totals	54	105	275	256	152	55	35	21	47	1000	5.1
Average No. of Persons	2.07	3.56	3.94	4.24	4.24	3.73	4.14	4.62	4.81	3.976	

(a) Draw the frequency polygon for the average number of persons residing in different types of tenements.

(b) Determine its mean, mode and quartiles; and S. D.: Calculate a measure of its skewness.

VII. Calculate from the above table the coefficient of correlation between the number of rooms per tenement and the number of persons. Draw the line of regression of the number of persons on the number of rooms.

VIII. What is the equation of the normal frequency curve? State its principal statistical properties. Fit a normal curve to the following distribution of height among the first-year students of a certain University:

Height in inches	61	62	63	64	65	66	67	68	69	70	71	72	73	74
No. of Students	2	10	11	38	57	93	106	126	109	87	75	23	9	4

Total 750

ANNAMALAI UNIVERSITY

B.Sc. (Honours) Subsidiary, and B.Sc. Degree Examination, 1936

WEDNESDAY, 1ST APRIL]

[10 A.M. TO 1 P.M.

PART IV

GENERAL PHYSICS

[Not more than seven questions are to be attempted. All questions carry equal marks.]

I. A particle is projected with a given velocity and direction of projection; show that its path is a parabola. Find its range on a horizontal plane through the point of projection, and its time of flight.

A tennis ball is projected from a point 7 ft. high with a velocity of 50 ft. per second; at what angle to the horizontal must it be hit so that it may just clear the top of a net 3.5 ft. high at a horizontal distance of 30 ft. from the point of projection? Neglect friction due to air.

II. Define moment of inertia.

Show that the moment of inertia of a body about an axis is equal to the sum of its moment of inertia about a parallel axis through its centre of gravity and the product of the mass of the body *into* the square of the distance between the axes.

A circular hoop of radius r is supported on a fine horizontal knife-edge. Determine the period of oscillation of the hoop when it is displaced through a small distance in its own plane.

III. Define centre of pressure.

Find the centre of pressure of a triangular lamina immersed in a liquid with one side in the surface of the liquid.

A dock gate is 12 ft. broad and 16 ft. deep, and the water rises to 12 ft. on one side and 3 ft. on the other. Calculate the resultant thrust and the centre of pressure for each side of the gate. Find also the magnitude, direction and point of application of the resultant of the two thrusts.

IV. State the law of gravitation. What are the dimensions of the gravitation constant?

Describe a torsion balance method of determining the value of this constant, and explain clearly how this value may be used to estimate the mean density of the earth.

V. State Hooke's law.

A copper wire 2 meters long and 3 sq. mm. in cross-section is suspended vertically and a load of 5 kg. attached to its lower end. Calculate the work done in stretching the wire if Young's modulus for Copper is 12×10^{11} dynes per sq. cm.

Derive an expression for the period of oscillation of a body suspended by an elastic cord.

VI. How would you experimentally determine Young's modulus for a metal bar of circular cross-section by supporting its ends on two knife-edges and loading it in the middle?

A cylindrical rod of radius R and a tube of the same material with external radius R and internal radius r are supported on the same pair of knife-edges and loaded equally midway between the points of support. Calculate the ratio of the sags produced in the two cases.

VII. Discuss the relation between the Surface Tension and the Surface Energy of a liquid.

Derive the formula connecting the surface tension of a liquid with its elevation in a narrow capillary tube.

What device would you adopt in order to determine experimentally the surface tension of a given liquid at various temperatures by the capillary rise method?

VIII. Define osmosis. What are semi-permeable membranes?

State the laws of osmotic pressure and show that they are analogous to the gaseous laws.

Why do solutions of electrolytes in water behave differently from those of non-electrolytes in respect of osmotic pressure?

Describe a method of measuring osmotic pressure.

IX. Give an account of Amagat's experiments on the compressibility of gases at high pressures, and state the conclusions reached.

State Van der Waals' modification of Boyle's law and explain in a general way the reasons for the modification.

ANNAMALAI UNIVERSITY

B.Sc. (Honours) Subsidiary and B.Sc. Degree Examination, 1936

THURSDAY, 2ND APRIL]

[10 A.M. TO 1 P.M.

PART IV

HEAT AND LIGHT

[Seven questions on the whole but not more than *four* questions from either group are to be attempted. All questions carry equal marks.]

GROUP A

1. Describe how the mean coefficient of expansion of mercury between 0° and 100°C . can be determined using a weight thermometer.

What fraction of the whole volume of a glass vessel must be filled with mercury in order that the remaining volume may be the same at different temperatures?

(Coefficient of cubical expansion for glass is 0.2×10^{-4} and for mercury 1.82×10^{-4}).

2. Explain how the specific heat of a gas at constant volume has been determined with Joly's steam calorimeter.

Given that for hydrogen, the specific heat at constant pressure is 3.402 and that 1 litre of the gas at N. T. P. weighs 0.0899 grams, calculate the specific heat at constant volume.

3. Indicate by diagrams the disposition of the isothermals of carbon dioxide at 60°C . 31°C . and 15°C . What light do these curves throw on the problem of the liquefaction of the gas?

State and justify any equation which has been proposed to represent them.

4. Describe with a diagram Carnot's reversible cycle of operations.

Explain what is meant by the absolute scale of temperature. Show that temperatures based on this scale coincide with those measured with a perfect gas thermometer.

5. State and explain Prevost's *theory of exchanges*.

Describe the construction and action of an instrument designed to measure radiant energy. Show how the temperature of the sun can be estimated from radiation measurements.

GROUP B

6. Show that deviation is a minimum when a ray of light passes symmetrically through a prism.

A glass prism of refractive angle 60° and index 1.523 is placed in a liquid medium of refractive index (i) 1.681, and (ii) 1.330. Determine the angles of minimum deviation in the two cases.

7. Give the theory of the colours of thin plates.

Describe with the aid of a diagram the experimental arrangement you would adopt to exhibit the ring system in transmitted light. Obtain an expression for the diameter of the n^{th} ring from the centre.

How do you account for the fact that in the reflected ring system there is more contrast between maxima and minima than in the transmitted system.

8. Explain in a general way the rectilinear propagation of light on the wave theory. Give the theory of the zone plate. Compare the action of a zone plate with that of a double convex lens.

9. How is a double image prism constructed ?

How is elliptically polarised light distinguished from partially polarised light ?

Explain the action of Laurent's polarimeter with the aid of a neat diagram showing the several parts of the instrument.

10. Write notes on any *three* of the following :—

- (i) Excited atom.
 - (ii) Spark Spectrum.
 - (iii) Absent Spectra in grating spectrometers.
 - (iv) Ramsden's Eye-piece.
-

ANNAMALAI UNIVERSITY

**B.Sc. (Honours) Subsidiary and B.Sc. Degree
Examination, 1936**

SATURDAY, 4TH APRIL]

[10 A.M. TO 1 P.M.

PART IV

SOUND, MAGNETISM AND ELECTRICITY

[*Seven* questions are to be attempted taking not more than *four* questions in either group. All questions carry equal marks.]

GROUP A

1. Derive an expression for the velocity of sound in air. Account for Laplace's modification of Newton's formula.

2. Explain how stationary waves are formed in air.

Account for the fact that the quality of the note emitted by a closed pipe differs from that of the same note emitted by an open pipe.

3. Obtain an expression for the energy of a charged condenser. What will be the effect on the energy due to changing the dielectric (1) keeping the charge constant, (2) keeping the potential constant?

An insulated sphere of radius 20 cms. is surrounded by a concentric earthed sphere of radius 22 cms. The specific inductive capacity of the dielectric is 3. Determine the charge required to raise the potential of the insulated sphere to 30 units, and also the energy of the charge.

4. Derive an expression for the capacity of a parallel plate condenser, when $\frac{1}{n}$ th of the distance between the plates is occupied by a slab of specific inductive capacity K .

Show how the specific inductive capacity of a liquid is determined.

5. Explain the terms *hysteresis*, *retentivity* and *susceptibility*. Show that $B = H + 4\pi I$. Show also that the energy lost per c. c. per cycle is the area of the I, H curve.

GROUP B

6. Describe the action of a moving coil ammeter. Show how it is calibrated by a potentiometer.

A galvanometer has a resistance of 10 ohms and gives a full scale deflection for a current of 10^{-3} ampere. Show how it can be used as an ammeter to give full scale deflection for 5 amperes and as a voltmeter to read up to 150 volts.

7. Obtain an expression for the couple acting on a rectangular coil carrying a current when it is placed in a magnetic field. Calculate the work done in rotating the coil through 90° from the position when the plane of the coil is parallel to the field.

A circular coil of radius 12 cms. and containing 50 turns carries a current of 4 amperes. Calculate the couple required to maintain it with its plane parallel to the magnetic field of strength 20 c. g. s. units.

8. Describe the action of the direct current series motor. Derive an expression for its efficiency.

A series motor is run at 120 volts and its resistance is $\frac{1}{2}$ ohm. Determine the power spent in turning the armature when the current is 12 amperes. Find the current when the work done is maximum.

9. Explain the action of the induction coil. What is the function of the condenser?

If in an induction coil having a coefficient of mutual induction of 10^{10} c. g. s. units, a current of 6 amperes is completely cut off in $\frac{1}{3000}$ th of a second, calculate the E. M. F. in volts at the terminals of the secondary.

10. Enumerate some of the properties of cathode rays.

Explain how $\frac{e}{m}$ for an electron has been determined.

ANNAMALAI UNIVERSITY

B. Sc. Degree Examination, 1936

FRIDAY, 27TH MARCH]

[10 A.M. TO 1 P.M.

PART III

GENERAL AND PHYSICAL CHEMISTRY

[Five questions carry full marks.]

1. Describe the experiments which led to the discovery of the rare gases. What are the commercial uses of these gases?

2. What is the law of Mass Action? Describe a critical experiment which would test the validity of this law.

3. Describe the classical experiments of Graham which led to the discovery of colloids. What are the characteristic properties of substances in the colloidal state?

4. Give a brief statement of the Phase Rule. Show how this rule can be applied in technical practice.

5. How can chemical constitution be inferred from physical properties?

6. What is hydrolysis? Describe at least two methods by which the degree of hydrolysis can be accurately measured.

7. Write short explanatory notes on the following :—

(a) specific conductivity, (b) solubility product, (c) molecular rotation, (d) gold number.

ANNAMALAI UNIVERSITY

B.Sc. Degree Examination, 1936

SATURDAY, 28TH MARCH]

[10 A.M. TO 1 P.M.

PART III

INORGANIC CHEMISTRY

[Answer *five* questions only.]

1. Give four different methods for preparing hydrogen. Mention the important properties and uses of hydrogen. How can you purify a sample of hydrogen obtained by the action of commercial zinc and dilute sulphuric acid (chamber acid)?

2. Describe with experimental details the preparation of pure chlorine. Indicate briefly how you can prepare specimens of the following:—(a) Anhydrous aluminium chloride from alumina, (b) Stannic chloride from tin, (c) Anhydrous ferrous chloride from iron, (d) Silver chloride from silver, (e) Magnesium chloride from magnesium sulphate.

3. (a) Explain with equations the reactions which take place when sulphur dioxide is passed into aqueous solutions or suspensions of the following:—(a) Freshly precipitated manganese dioxide, (b) Hydrogen sulphide, (c) Potassium permanganate, (d) Potassium chlorate.

(b) Discuss briefly the evidence on which the constitutional formulae of sulphurous acid are based.

4. Explain the reactions involved in the cyanide process for the extraction of Gold and Silver. Starting from Silver mention briefly how to obtain specimens of:—(a) Silver Bromide, (b) Silver Sulphate, and (c) Silver Nitrite.

[T. O.]

5. How is Potassium permanganate obtained from pyrolusite? Discuss fully the position of manganese in the Periodic table.

6. How is electricity used in chemical industry? Illustrate your answer with special reference to the manufacture of the following:—Phosphorus, Nitric Acid, Aluminium.

7. Write short notes on any *four* of the following:—Water-gas, Alums, Cobaltammines, Nickel Carbonyl, Thionic Acids, Peracids.

ANNAMALAI UNIVERSITY

B. Sc. Degree Examination, 1936

MONDAY, 30TH MARCH]

[10 A.M. TO 1 P.M.

PART III

ORGANIC CHEMISTRY

[Attempt question *one* and any other *four* questions.]

1. A substance *A* of vapour density 56.5 gave on analysis C, 21.2; H, 1.8; Cl, 62.8%; the remainder being oxygen. Treated with water it yielded a substance *B* containing C, 25.4; H, 3.2; Cl, 37.6 per cent. Suggest structural formulae for these substances and write an equation for the reaction.

How could *A* be regenerated from *B*? How could *A* be synthesised starting from carbon? (C = 12; H = 1; O = 16; Cl = 35.5).

2. Discuss briefly the chemical and economic aspects of the manufacture of ethyl alcohol from the various feasible raw materials.

3. Explain the fundamental principles of the theory of geometrical isomerism of carbon compounds and show by examples the classes of substances to which the theory is applicable. In the case of one important selected group indicate the methods that have been employed for the determination of the configuration.

4. Outline the methods for the synthesis of four of the following compounds:—

(a) $\text{CH}_3\text{CH}_2\cdot\text{CHOH}\cdot\text{CH}_3$, (b) $\text{CH}_3\text{CH}_2\text{CHOHCOOH}$, (c) $\text{CH}_3\text{COCH}(\text{CH}_3)_2$, (d) $\text{C}_6\text{H}_5\text{COCH}_2\cdot\text{CH}_3$, (e) An aldohexose from an aldopentose.

[T. O.]

5. What do you understand by '*Orienting influence*'? Classify six of the following groups according to their orienting influence:—NO₂,—CH₃,—NH₂,—CN,—OCH₃,—Cl,—SO₃H,—CHO. Outline the preparation of *m*- and *p*-nitrobenzoic acid and of *m*- and *p*-nitrochlorobenzene.

6. Write an account of the isomeric dihydric phenols, stating the methods of their preparation, and their chemical characteristics. Discuss their application in chemistry.

7. How is alizarin manufactured? Discuss, as fully as you can, its constitution.

ANNAMALAI UNIVERSITY

B. Sc. Degree Examination, 1936

TUESDAY, 31ST MARCH]

[10 A.M. to 1 P.M.

PART IV

BOTANY

(THALLOPHYTES, BRYOPHYTES, PTERIDOPHYTES
AND GYNOSPERMS)

[N.B.—Answer any *five* questions.]

I. Describe the germination of the microspore of *Cycas* up to the time of fertilisation.

II. Explain the difference in the structure of the stele in the following:—

Lycopodium, *Pleopeltis* and *Marsilia*.

III. Describe with sketches the variations in the structure of the gametophyte in the Hepaticae.

IV. Write an account of the different modes of asexual reproduction met with in algae.

V. Describe the origin and structure of the ascocarp in any of the Ascomycetes studied by you.

VI. Describe the life-history of *Polysiphonia*.

VII. Give a clear account of the development and structure of a fern sporangium. Where do ferns grow and how do they get distributed in nature?

ANNAMALAI UNIVERSITY

B. Sc. Degree Examination, 1936

WEDNESDAY, 1ST APRIL]

[10 A.M. to 1 P.M.

PART IV

BOTANY

(ANGIOSPERMS, PHYSIOLOGY, HISTOLOGY
AND GENERAL PRINCIPLES)

[*N.B.*—Answer any *five* questions.]

I. Describe with sketches the formation of a lateral root in a Dicotyledon.

II. Mention the chief characteristics of the families Solanaceæ and Urticaceæ. Point out the economic importance of any two plants belonging to each.

III. Describe any three of the following :

(*a*) Spikelet of a grass.

(*b*) Androecium of Scitamineæ.

(*c*) Perianth of Sapotaceæ.

(*d*) Thalamus in Rosaceæ.

IV. Mention the several elements that are indispensable for plant growth. How would you demonstrate that these are essential? Point out the importance of (1) potassium, and (2) iron to plants.

V. Give an account of the different kinds of tropic movements in plants.

VI. Explain the chief features of aquatic plants with special reference to the plants growing in the Annamalainagar area.

VII. Explain clearly Darwin's idea of the origin of new species.

ANNAMALAI UNIVERSITY

B. Sc. Degree Examination, 1936

FRIDAY, 27TH MARCH]

[10 A.M. TO 1 P.M.

PART III

ZOOLOGY

(INVERTEBRATES)

[Answer *five* questions.]

I. Mention as many of the Protozoa as you know which cause disease. Describe very briefly the life-history of *four* of them and show how a knowledge of the life-history of the parasite is often helpful in controlling the disease.

II. Compare the Hydrozoa with the Scyphozoa and show the relation of the two groups to the Anthozoa.

III. Give an account of the excretory organs in the Annelida.

IV. Give an account of the pelagic Mollusca, bringing out clearly the adaptations they show for their pelagic life.

V. Give an account of the coelom formation in the Echinodermata.

VI. Describe the different modes of respiration occurring in the Arthropoda.

VII. Write notes on :

Amphiblastula ; Miracidium ; Flame-cells ;
Syncytium ; Muller's larva.

ANNAMALAI UNIVERSITY

B. Sc. Degree Examination, 1936

SATURDAY, 28TH MARCH]

[10 A.M. TO 1 P.M.

PART III

ZOOLOGY

(CHORDATA, EMBRYOLOGY, AND GENERAL)

[*N.B.*—Answer *three* questions from Group *A* and *two* questions from Group *B*]

A

1. Give a comparative account of the excretory organs of the Chordata.
2. Describe the feeding and respiratory mechanisms of Branchiostoma (= Amphioxus).
3. Discuss the affinities of Birds and state what is known concerning their origin.
4. Mention with examples the vertebrate groups in which loss of limbs has occurred. Discuss other anatomical modifications that are associated with this reduction of limbs.

B

5. Describe the development and functions of the placenta in a mammal.
 6. Give an account of some animal secretions which are of interest from a bionomic standpoint.
 7. Write a short essay on "Life in the Deep-sea".
 8. Explain the theories of evolution as stated by Lamarck and Darwin.
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