



36102

I Semester B.Sc./B.C.A./B.Sc.(Biotech)/B.Sc.(Fashion Design)/
B.H.M. Degree Examination, November/December 2019

KANNADA

Paper I – ಆಧುನಿಕ ಕವಿತೆಗಳ ಮಾಲೆ ಹಾಗೂ ಸಣ್ಣ ಕತೆಗಳ ಸಂಗ್ರಹ

(CBCS – New)

Time : 3 Hours

Max. Marks : 70

ಸೂಚನೆ : ಭಾಷೆ ಹಾಗೂ ಬರಹದ ಶುದ್ಧಿಗೆ ಗಮನ ಕೊಡಲಾಗುವುದು.

1. (a) 'ಜೋಗಿ', ವರ್ಷ ಭೈರವ, 'ಜಡೆ' - ಇವುಗಳಲ್ಲಿ ಎರಡು ಕವನಗಳ ಭಾವ ಸೌಂದರ್ಯ ವಿವರಿಸಿರಿ.

ಅಥವಾ

- (b) 'ವಿನಾದರೂ ಮಾಡುತಿರು ತಮ್ಮ', ಗೂಡಿನಿಂದ ಹೊರಗೆ ಇವುಗಳ ಭಾವ ಸೌಂದರ್ಯ ವಿಶ್ಲೇಷಿಸಿರಿ. (10)

2. (a) ಬಿ.ಎಂ. ಶ್ರೀಯವರ 'ಕಾರಿ ಹೆಗಡೆಯ ಮಗಳು' ಹಾಗೂ 'ರೊಟ್ಟಿ ಮತ್ತು ಹುಡುಗಿ', - ಈ ಕವನಗಳಲ್ಲಿನ ಸ್ತ್ರೀತ್ವದ ವಿವಿಧ ಮುಖಗಳನ್ನು ವಿಶ್ಲೇಷಿಸಿರಿ.

ಅಥವಾ

- (b) ಪ್ರೊ. ಸಿದ್ದಲಿಂಗಯ್ಯನವರ 'ಹಣೆ ಬರಹ' ಎಂಬ ನಾಟಕ ಮತ್ತು 'ಗೋವು ತಿಂದು ಗೋವಿನಂತಾದನನು'- ಕವನಗಳಲ್ಲಿ ಮೂಡಿದ ಸಮಾಜದ ವಸ್ತು ಸ್ಥಿತಿಯನ್ನು ವಿವರಿಸಿರಿ. (10)

3. (a) 'ದಹನ' ಕಥೆಯಲ್ಲಿ ಮಾನವನ ಯಾಂತ್ರಿಕ ಬದುಕು ಹೇಗೆ ಮೂಡಿ ಬಂದಿದೆ? ವಿವರಿಸಿರಿ.

ಅಥವಾ

- (b) 'ರುದ್ರಪ್ಪನ ಖಡ್ಗದಲ್ಲಿ ಮೂಡಿಬಂದ ಪರಂಪರೆ ಮತ್ತು ವಾಸ್ತವತೆಯನ್ನು ವಿವರಿಸಿರಿ. (10)

4. (a) ಪಿ. ಲಂಕೇಶರ 'ಒಂದು ಬಾಗಿಲು' ಕಥೆಯು ಬದುಕಿನ ಅನುಭವಗಳನ್ನು ಸಾಂಕೇತಿಸುತ್ತದೆ ಹೇಗೆ? ವಿವರಿಸಿರಿ.

ಅಥವಾ

- (b) ನಿಸರ್ಗದ ಅಚ್ಚರಿ ಮತ್ತು ವಿಜ್ಞಾನದ ಸತ್ಯಗಳು 'ಕುಕ್ಕಟ ಪಿಶಾಚ' ಕಥೆಯಲ್ಲಿ ಹೇಗೆ ಅಡಕವಾಗಿದೆ? ವಿವರಿಸಿರಿ. (10)

1/2

P.T.O.



5. ಬೇಕಾದ ಎರಡಕ್ಕೆ ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ :

(2 × 5 = 10)

- (a) ಜಡೆ
- (b) ಇರುವೆ ಗೂಡು
- (c) ದಹನ
- (d) ಸರಸ್ವತಿಯ ಫೇಸ್‌ಬುಕ್ ಪ್ರಸಂಗ

6. ಬೇಕಾದ ನಾಲ್ಕಕ್ಕೆ ಉತ್ತರಿಸಿರಿ :

(4 × 5 = 20)

- (a) ದ.ರಾ. ಬೇಂದ್ರೆ
- (b) ದೇವರ ಮಕ್ಕಳು ಕವನ
- (c) ಕುವೆಂಪು
- (d) ರಂಗಪ್ಪ ಮೇಷ್ಟ್ರು
- (e) ಕೆ.ಪಿ. ಪೂರ್ಣಚಂದ್ರ ತೇಜಸ್ವಿ
- (f) ಪ್ಯಾರ ಮತ್ತು ಕಿವಿ ಕೋಳಿ ಹುಡುಕಾಟ
- (g) ಶಂಕರ
- (h) ಗೌರಿ ಮತ್ತು ಕರ್ನಾಟಕ ವಿಶ್ವವಿದ್ಯಾಲಯ



20101

**I Semester B.A./B.Sc./B.Com./B.B.M./B.S.W./B.C.A./G.M.T.
Degree Examination, November/December 2019**

BASIC ENGLISH

English — I - Words And Beyond

(New)

Time : 3 Hours

Max: Marks : 80

1. Annotate **any two** of the following : (2 × 6 = 12)
- (a) "Well : that is good for me:
that is how I desire to speak".
 - (b) The four of them went back to the hut without further delay. They found the corpse missing, the litter empty.
 - (c) "Children have no manners but at least they're honest - they never pretend".
 - (d) Sarah's fingers danced over the typewriter like little flies above a summer stream.
2. Answer **any one** of the following : (1 × 16 = 16)
- (a) What is Shaw's attitude to speaking, 'Correct English', both as far as native speakers are concerned as well as foreign speakers of English?
 - (b) Discuss how the theme of death is the focus of the story, 'The Living and the Dead'.
3. Annotate **any two** of the following : (2 × 6 = 12)
- (a) And I have learned, too, to laugh with only my teeth and shake hands without my heart.
 - (b) Had he and I but met
By some old ancient inn.
We should have sat us down to wet
Right many a nipperkin!
 - (c) Shine on me, sunshine
Rain on me, rain
Fall softly, dewdrops
And cool my brow again.
 - (d) She wants a fifty paise coin
She says she will take you
To the horseshoe shrine.

20101



4. Answer **any one** of the following :

(1 × 16 = 16)

- (a) How does artificiality and appearance creep into daily life according to Gabriel Okara?
- (b) What is Rabindranath Tagore's message to the countrymen in his poem 'Where the mind is without fear'?

5. Grammar :

(a) Rewrite the following sentences as directed :

(4 × 2 = 8)

- (i) I have reached my destination.
(Rewrite into Past Perfect Tense)
- (ii) They are playing cricket.
(Rewrite Past Continuous Tense)
- (iii) Parvati plays the violin brilliantly.
(Rewrite into Simple Past Tense)
- (iv) My watch has kept good time.
(Rewrite into Past Perfect Continuous Tense)

(b) Rewrite the following sentences as directed :

(4 × 2 = 8)

- (i) The Indians defeated the British at Mysore.
(Rewrite into Present Continuous Tense)
- (ii) The ship had sailed.
(Rewrite into Present Perfect Continuous Tense)
- (iii) She had been living here.
(Rewrite into Simple Present Tense)
- (iv) She was completing her assignment.
(Rewrite into Present Perfect Tense)

(c) Rewrite the following sentences into passive voice :

(4 × 2 = 8)

- (i) Everyone loves him.
- (ii) He handed her a chair.
- (iii) Columbus discovered America.
- (iv) The manager will give you a ticket.



36112

**I Semester B.Sc./B.C.A./G.M.T. Degree Examination,
November/December 2019**

BASIC ENGLISH

English — I

(CBCS – 2017-18 – New)

Time : 3 Hours

Max. Marks : 70

SECTION - I

(SHORT STORIES)

1. Annotate **any two** of the following : (2 × 3 = 6)
- (a) I wanted to raise my hand and touch her hair; but she moved away.
- (b) A huge crowd stood around and watched in great glee. The engine began to move.
- (c) The girl said, I'm getting down at Saharapur. My aunt is meeting me there.
2. Answer **any one** of the following : (1 × 10 = 10)
- (a) Justify the title of the story 'The eyes are not here' by Ruskin Bond.
- (b) What problem did the narrator face after winning the price in "Engine Trouble"?

SECTION - II

(ESSAY)

3. Annotate **any two** of the following : (2 × 3 = 6)
- (a) In India, he signed with real pain. We could write the definitive book on envy.
- (b) The Dabbawalas are astounded when they are told that their business is a perfect example of Six Sigma.
- (c) They deliver nearly 200,000 lunches every day.
4. Answer **any one** of the following : (1 × 10 = 10)
- (a) What is the secret behind the success of the Dabbawalas trade?
- (b) What are the difference between American and Indian education?



SECTION - III

5. Annotate **any two** of the following : (2 × 4 = 8)
- (a) At the end of the bumpy ride
With your own face on either side
When you get off the bus.
- (b) I was angry with my friend;
I told my wrath my wrath did end.
- (c) Turning again toward childish treble,
Pipes and whistles in his sound.
6. Answer **any one** of the following : (1 × 10 = 10)
- (a) Explain the different stages in a man's life as given in the poem.
- (b) What is the message of a poison tree by William Blake?

SECTION - IV

(GRAMMAR)

7. Fill in the blanks with appropriate articles : (5 × 1 = 5)
- (a) He goes to college in _____ morning.
- (b) Mr. Roy is _____ honorable man.
- (c) The dog is _____ domestic animal.
- (d) I saw _____ animal moving in the forest.
- (e) _____ Ganga is a holy river.
8. Fill in the blanks with appropriate prepositions : (5 × 1 = 5)
- (a) Exam will be held _____ Monday.
- (b) Eat the ice cream _____ the spoon.
- (c) This film is _____ adults only.
- (d) Her house is _____ the college.
- (e) The man fell _____ the river.



9. Change the sentences according to the instructions given in the brackets :
(5 × 2 = 10)

- (a) She speaks Kannada.
(Change into present continuous tense)
- (b) I am going to Hubli.
(Change into simple present tense)
- (c) We are buying fruits from the market.
(Change into present perfect continuous tense)
- (d) The boy is learning English.
(Change into present perfect continuous tense)
- (e) She plays cricket very well.
(Change into negative sentence)
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36103

I Semester B.C.A./B.Sc. Degree Examination,
November/December 2019

BASIC HINDI

Paper I – Study of Indian Language

(CBCS)

Time : 3 Hours

Max. Marks : 70

सूचना : लिखावट शुद्ध और देवनागरी लिपि में हों।

पठित पुस्तकें : 1. अभिनव काव्य सौरभ, 2. महाभोज,

1. किन्हीं दो की संदर्भ सहीत व्याख्या कीजिए। (2 × 7 = 14)
 - (a) दूसरों की वेदना में वेदना है जो दिखाता,
वेदना से मुक्ति का निज हर्ष केवल वह छिपाता:
तुम दुखि हो तो सुखी मैं विश्व का अभिशाप भारी!
क्या करूँ संवेदना लेकर तुम्हारी? क्या करूँ
 - (b) हृदय-हृदय के बीच खाइयाँ, लहू, विछा मैदानों में,
धूम रहे हैं युद्ध सडक पर, शांति छिपी शमशानों में,
 - (c) वे सत्य को नहीं समझते
परणती को समझते हैं
और फिर उसे स्वयं सिद्धी मान कर
स्वीकारते हैं और सराहते हैं।
2. किन्हीं दो प्रश्नों के उत्तर लिखिए। (2 × 10 = 20)
 - (a) नदी के द्वीप, काव्य का उद्देश्य समझाइए।
 - (b) कवि नीरज अपनी कविता 'सासों के मुसाफिर' में हमें क्या संदेश देना चाहते हैं।
 - (c) आये कोई तुम से शीखे, कविता का उद्देश स्पष्ट कीजिए।
3. किन्हीं दो प्रश्नों का उत्तर लिखिए (2 × 10 = 20)
 - (a) महाभोज, में राजनीतिक तिकडंबाजी कैसे चित्रित किया गया है समजाईए।
 - (b) महाभोज, उपन्यास का उद्देश स्पष्ट कीजिए।
 - (c) महाभोज, उपन्यास के आधार पर 'जोरावर सिंह' पात्र का चरित्र चित्रण कीजिए।

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4. किन्हीं दो पर टिप्पणी लिखिए ।

(2 × 5 = 10)

(a) एस पि सकसेना

(b) रुक्मा

(c) सुकुल बाबु ।

5. किन्सी एक विषय पर निबंध लिखिए ।

(1 × 6 = 6)

(a) एक कदम स्वच्छता की ओर ।

(b) राष्ट्र भाषा हिन्दी

(c) भारतीय एकात्मकता ।



36121

I Semester B.Sc. Degree Examination, November/December 2019

PHYSICS

Paper I – Mechanics and Properties of Matter

(CBCS)

Time : 3 Hours

Max. Marks : 70

Instructions : Write answers to Section A questions in the first two pages only.

SECTION – A

Answer the following :

(15 × 1 = 15)

1. What kind of frame of reference is rotatory frame of reference?
2. Write one characteristic of centre of mass.
3. What is an oblique collision?
4. Define Newton's law of impact.
5. Give one example for torque.
6. Define angular momentum.
7. Write one characteristic of inelastic collision.
8. Write the expression for moment of inertia.
9. Define perpendicular axes theorem.
10. Why most of the mass is concentrated at the rim of a flywheel?
11. Define longitudinal strain.
12. What is elastic fatigue?
13. Define Poisson's ratio.
14. State law of areas of Kepler's law of planetary motion.
15. What is Streamline flow of a liquid?



SECTION - B

Answer **any five** of the following :

(5 × 5 = 25)

16. What are Galilean transformation equation? Show that velocity is variant in Galilean transformation.
17. Derive an expression for the loss of kinetic energy in one dimension inelastic collision.
18. Derive an expression for law of conservation of angular momentum with an illustration.
19. State and prove parallel axes theorem.
20. Explain origin of elastic forces with neat figure.
21. Write a note on geostationary satellite.
22. Derive an expression for terminal velocity.

SECTION - C

Answer **any three** of the following in detail :

(3 × 10 = 30)

23. (a) Deduce an expression for Coriolis force.
(b) Find the horizontal component of Coriolis force acting on a body of mass 0.3 kg moving north word with a horizontal velocity of 200 m/s at 30°N latitude on earth. (6 + 4)
24. (a) Derive an expression for the velocity of single stage rocket at any instant of time.
(b) Verify the law of conservation of energy in case of a particle executing SHM. (5 + 5)
25. (a) Obtain an expression for M.I. of the circular disc about an axis passing through its center.
(b) Describe an experiment to find the moment of inertia using flywheel. (5 + 5)
26. (a) Derive an expression for couple per unit twist of a torsional cylinder.
(b) Find the energy stored in a wire 5 meters long and 10^{-3} meter in diameter when it is stretched through 3×10^{-3} meter by a load. Young's modulus of the material is $2 \times 10^{11} \text{ Nm}^{-2}$. (6 + 4)
27. (a) Deduce Poiseuille's equation for the steady flow of liquid in a tube.
(b) Derive an expression for workdone in stretching a wire. (5 + 5)



30153

I Semester B.Sc. Degree Examination, November/December 2019

MATHEMATICS

Paper 1.2 – Calculus – I

(New)

Time : 3 Hours

Max. Marks : 60

Instructions : Answer **all** Sections.

SECTION – A

Answer **any ten** of the following :

(10 × 2 = 20)

1. Find the n^{th} derivative of $y = e^{3x} \sin^2 x$.
2. Find the n^{th} derivative of $y = \frac{x}{2x^2 + 3x + 1}$.
3. If $y = x^n \cdot \log x$ show that $y_{n+1} = \frac{n!}{x}$.
4. If $u = \Phi(y + ax) + \psi(y - ax)$ show that $\frac{\partial^2 u}{\partial x^2} = a^2 \frac{\partial^2 u}{\partial y^2}$.
5. If $f(x, y) = x^y + y^x$, show that $\frac{\partial^2 f}{\partial x \partial y} = \frac{\partial^2 f}{\partial y \partial x}$.
6. If $u = x^3 + y^3 + z^3 - 3xyz$, show that $x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y} + z \frac{\partial u}{\partial z} = 3u$.
7. Show that the curves $r = a\theta$ and $r = a/\theta$ intersect orthogonally.
8. For the curve $r = a(1 - \cos \theta)$ show that $2ap^2 = r^3$.
9. Find $\frac{ds}{dx}$ for the curve $y^2 = 4ax$.
10. Find the radius of curvature at any point (p, r) on the curve $r^3 = a^2 p$.
11. Show that $y = e^x$ is everywhere concave upwards.
12. Find the envelope of the family of circles $(x - \alpha)^2 + y^2 = 4\alpha$, where ' α ' is parameter.

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SECTION - B

Answer **any four** of the following :

(4 × 5 = 20)

13. Find the n^{th} derivative of $y = e^{ax} \cos(bx + c)$.
14. If $y = \frac{\sinh^{-1} x}{\sqrt{x^2 + 1}}$ then prove that $(x^2 + 1)y_{n+2} + (2n + 3)xy_{n+1} + (n + 1)^2 y_n = 0$.
15. If $x = r \sin \theta \cos \phi$, $y = r \sin \theta \sin \phi$, $z = r \cos \theta$ then find $\frac{\partial(x, y, z)}{\partial(r, \theta, \phi)}$.
16. State Euler's theorem and prove Euler's extension theorem.
17. If $z = e^{ax+by} f(ax - by)$, show that $b \frac{\partial z}{\partial x} + a \frac{\partial z}{\partial y} = 2abz$.
18. Prove that $\frac{\partial(u, v)}{\partial(x, y)} \times \frac{\partial(x, y)}{\partial(u, v)} = 1$.

SECTION - C

Answer **any four** of the following :

(4 × 5 = 20)

19. With usual notations derive a formula for angle between radius vector and tangent.
20. Find the angle of intersection of curves $r^2 \sin 2\theta = 4$ and $r^2 = 16 \sin 2\theta$.
21. Find the pedal equation of curve parabola $y^2 = 4a(x + a)$.
22. Find the radius of curvature at any point for the curve $x = a \cos^3 t$ and $y = a \sin^3 t$.
23. Find the evolute of the ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$.
24. Show that the curve $r = \frac{a\theta^2}{\theta^2 - 1}$ has a point of intersection at $r = \frac{3a}{2}$.



30123

I Semester B.Sc. Degree Examination, November/December 2019

MATHEMATICS

Paper 1.1 – Algebra – I

(New)

Time : 3 Hours

Max. Marks : 60

Instructions : Answer **all** Sections.

SECTION – A

Answer **any ten** of the following :

(10 × 2 = 20)

1. Symbolize the following and negate “All odd numbers are not prime numbers and some prime numbers are even”.
2. Define quantifier and give an example of quantified open sentence.
3. Find the truth set of $x^2 - 3x + 2 > 0$, the replacement set being z , the set of all integers.
4. If p is false and $(q \wedge r) \rightarrow p$ is true, show that $\sim q \vee \sim r$ is true by direct proof.
5. State Remainder theorem and Factor theorem.
6. Solve the equation $x^3 + 15x^2 - 72x + 76 = 0$ given that there exists integral roots between -3 and 3 .
7. Find the nature of roots of the equation $x^9 - x^5 + x^4 + x^3 + 1 = 0$.
8. Find the equation whose roots are 3 times the roots of $x^3 + 2x^2 - 4x + 1 = 0$.

9. Find the rank of the matrix $\begin{bmatrix} 2 & 3 & 4 \\ 3 & 1 & 2 \\ -1 & 2 & 2 \end{bmatrix}$ by using definition.

10. Show that the matrices $\begin{bmatrix} 1 & 2 & -2 \\ 2 & 5 & 4 \\ -1 & -3 & 2 \end{bmatrix}$ is equal to $\begin{bmatrix} 1 & 2 & -2 \\ 0 & 1 & 8 \\ 0 & -1 & 0 \end{bmatrix}$.



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- 11. Define normal form of a matrix with an example.
- 12. For what values of μ and η the following system

$$\begin{aligned} x + y + z &= 6 \\ x + 2y + 3z &= 10 \\ x + 2y + \mu z &= \eta \end{aligned}$$

will have a unique solution.

SECTION - B

Answer **any four** questions :

(4 × 5 = 20)

- 13. Define compound open sentence and prove that the truth set of the negation of an open sentence $P(x)$ is the complement of the truth set of $P(x)$ that is $T[\sim P(x)] = \{T[P(x)]\}'$.
- 14. If $P(x)$: x is prime divisor of 210 and $q(x)$: $x^2 < 40$ the replacement set is the set z of integers, find the solution set of $p(x) \vee q(x)$ and $p(x) \wedge q(x)$.
- 15. If two roots of the equation $x^4 + 6x^3 - 16x^2 + 24x - 20 = 0$ are purely imaginary, solve the equation.
- 16. Transform the equation $x^5 + \frac{4}{3}x^4 + \frac{2}{9}x^3 + \frac{1}{12}x^2 + \frac{1}{36} = 0$ into another with integral co-efficients.
- 17. Solve $28x^3 + 9x^2 + 1 = 0$ by Cardon's method.
- 18. Transform the equation $2x^3 - 9x^2 + 13x - 6 = 0$ into one in which the second term is missing and hence solve the equation.

SECTION - C

Answer **any four** questions :

(4 × 5 = 20)

- 19. Find the rank of the matrix $\begin{bmatrix} 1 & 1 & 1 & 1 \\ 1 & 3 & -2 & 1 \\ 2 & 0 & -3 & 2 \\ 3 & 3 & 0 & 3 \end{bmatrix}$ using elementary row operations.

- 20. Find the rank of the matrix A , by reducing into its normal form where

$$A = \begin{bmatrix} 1 & 1 & 1 & 2 \\ 2 & 1 & -3 & -6 \\ 3 & -3 & 1 & 2 \end{bmatrix}$$



21. Solve completely the system of equations

$$x_1 + 3x_2 + 2x_3 = 0$$

$$2x_1 - x_2 + 3x_3 = 0$$

$$3x_1 - 5x_2 + 4x_3 = 0$$

$$x_1 + 17x_2 + 4x_3 = 0.$$

22. Test the following system for consistency and solve if it is consistent.

$$x + 2y - z = 3$$

$$3x - y + 2z = 1$$

$$2x - 2y + 3z = 2.$$

23. Find the eigen value and eigen vector of the matrix $\begin{bmatrix} 1 & 2 \\ 2 & -2 \end{bmatrix}$.

24. Verify the Cayley Hamilton theorem for $A = \begin{bmatrix} 3 & 2 \\ 2 & 3 \end{bmatrix}$ and hence find A^{-1} .



36124

I Semester B.Sc. Degree Examination, November/December 2019

BOTANY

Paper 1 – Viruses, Bacteria, Cyanobacteria, Algae, Fungi and Lichens

(New Syllabus – CBCS)

Time : 3 Hours

Max. Marks : 70

Instructions :

- 1) Answer **all** the Sections.
- 2) Draw diagrams wherever necessary.

I. Answer the following :

(15 × 1 = 15)

1. Define Virus. Name any one plant disease caused by them.
2. What is Cystocarp?
3. Define Algae.
4. Define foliose lichens.
5. Name the male and female sex organs in Chara.
6. Define mycelia.
7. Name the algal members having capcells.
8. What are biofertilizers?
9. What are charmogones?
10. What is false branching? Name the algal member which possess false branching.
11. Name the pathogen that causes red rot of sugarcane.
12. Define Plant pathology.
13. What is Sterigmata?
14. What are diatoms?
15. What is Plasmid? Give an example.



II. Answer **any five** of the following : (5 × 5 = 25)

16. Describe the structure of bacteriophage with neat labelled diagram.
17. Describe the asexual reproduction in *Cercospora*.
18. Write the symptoms and controlling measures of grain, smut of Sorghum.
19. Give brief account of life history of ectocarpus.
20. Give the general characters of fungi.
21. Explain the structure of scytonema with neat labelled diagram.
22. Write note (short) on :
 - (a) Soridia
 - (b) Heterocyst
 - (c) Nannandrium.

III. Answer **any three** of the following : (3 × 10 = 30)

23. What is Sporangia? Explain the unilocular and plurilocular sporangia of ectocarpus.
24. Explain the life cycle of *Rhizopus*.
25. Describe thallus and sexual reproduction of *Volvox*.
26. Describe the asexual reproduction in albugo with neat labelled diagram.
27. What are viruses? Give the living and non-living characters of virus.



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I Semester B.Sc. Degree Examination, November/December 2019

ZOOLOGY

Paper Z-1 – Biology of Non-Chordates

(CBCS)

Time : 3 Hours

Max. Marks : 70

Instructions :

- 1) Answer **all** Sections.
- 2) Draw labelled diagrams wherever necessary.

SECTION – A

Answer **any five** of the following questions :

(5 × 2 = 10)

1. What are flame cells? Mention their function.
2. What is metagenesis?
3. Which is the highest and lowest taxon in Linnaean hierarchy?
4. What is mantle? In which phylum does it occur?
5. What is digenetic life cycle? Give an example.
6. Define spongocoel. Mention the larval stages in the life cycle of sponges.

SECTION – B

Answer **any six** of the following :

(6 × 5 = 30)

7. Explain the different theories regarding locomotion in Amoeba.
8. Sketch and label the nervous system of prawn.
9. Explain briefly about the systems of classification.
10. Write a note on the key characteristics of Wucheraria bancrofti.
11. Enumerate the unique features of the phylum Echinodermata.
12. Give an account on the classification of phylum Annelida upto classes with examples.
13. Describe the nervous system of pila with a neat labeled diagram.
14. Write the General characteristics of the phylum platyhelminthes.

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SECTION - C

Answer **any three** of the following in detail :

(3 × 10 = 30)

15. Describe the digestive system of prawn with a neat labeled diagram.
 16. Write an essay on asexual cycle of Malarial Parasite.
 17. Explain the life cycle of obelia with a neat labeled diagram.
 18. Enumerate the unique features of the phylum mollusca and classify upto classes.
 19. Describe the life history of Taenia solium with a neat labeled diagram.
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I Semester B.Sc. Degree Examination, November/December 2019

Paper I – CHEMISTRY
(CBCS – New Syllabus)

Time : 3 Hours

Max. Marks : 70

Instructions :

- 1) Section A contains questions from Inorganic, Organic and Physical Chemistry.
- 2) Section B contains questions from Inorganic Chemistry, Section C contains questions from Organic Chemistry and Section D contains questions from Physical Chemistry.
- 3) Answer **all** the four Sections A, B, C and D.

SECTION – A

Answer **any ten** of the following questions :**(10 × 1 = 10)**

1. Give the electronic configuration of Na.
2. State Aufbau principle.
3. Define Ionic radii.
4. Write Born-Lande equation.
5. Why Sigma bond is stronger than Pi bond?
6. What are carbenes?
7. Define bond length.
8. What are diastereomers?
9. Define Mean free path.
10. What are Miller indices?
11. Define Refractive index.
12. State law of corresponding states.

SECTION – B

Answer **any two** of the following questions :**(2 × 10 = 20)**

13. (a) Describe the Quantum Numbers. **(6)**
- (b) Write the physical significance of ψ and ψ^2 . **(4)**



14. (a) Discuss the Born-Haber cycle. (6)
(b) Explain the variation of ionization energy in the periodic table and give the meaning of ionization energy. (4)
15. (a) Define Electron affinity. Explain its variation in the periodic table. (6)
(b) Give the four characteristics of ionic compounds. (4)

SECTION - C

Answer **any two** of the following questions : (2 × 10 = 20)

16. (a) Describe the sp^2 hybridization with ethane as an example. (6)
(b) What are carbonium ions? Give a method of formation of carbonium ions. (4)
17. (a) Define with an example of (i) Addition reactions (ii) Reduction reactions. (6)
(b) Explain : (i) Chiral carbon (ii) Enantiomers. (4)
18. (a) What is optical isomerism? Explain the optical isomerism in tartaric acid. (6)
(b) Write the formation and stability of carbanion. (4)

SECTION - D

Answer **any two** of the following questions : (2 × 10 = 20)

19. (a) Deduce Vander Waal's reduced equation of states. (6)
(b) Give the differences between Crystalline solid and Amorphous solid. (4)
20. (a) Describe the method of determination of surface tension of a liquid by using Stalgnometer. (6)
(b) Write a note on continuity of states. (4)
21. (a) Derive Bragg's equation. (6)
(b) Discuss the application of Parachor in elucidating the structure of Quinone. (4)



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I Semester B.B.A./B.A./B.Sc./B.Com./B.C.A./B.S.W.
Degree Examination, November/December 2019

POLITICAL SCIENCE

Indian Constitution (Compulsory)

(CBCS - New)

Time : 3 Hours

Max. Marks : 70

SECTION - A/ವಿಭಾಗ - ಎ

Answer **any ten** of the following each in two or three sentences : (10 × 2 = 20)

ಕೆಳಗಿನ ಯಾವುದಾದರೂ ಹತ್ತು ಪ್ರಶ್ನೆಗಳಿಗೆ ಎರಡರಿಂದ ಮೂರು ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿ :

1. What is Constitution?

ಸಂವಿಧಾನ ಎಂದರೇನು?

2. What is citizenship?

ಪೌರತ್ವ ಎಂದರೇನು?

3. Write the meaning of liberty.

ಸ್ವಾತಂತ್ರ್ಯ ಪದದ ಅರ್ಥ ಬರೆಯಿರಿ.

4. What is preamble?

ಪ್ರಸ್ತಾವನೆ ಎಂದರೇನು?

5. Give the meaning of Judicial Review.

ನಾಮಿಕ ವಿಮರ್ಶೆ ಎಂದರೇನು?

6. What is Republic?

ಗಣರಾಜ್ಯ ಎಂದರೇನು?



7. What is secular state?
ಜಾತ್ಯಾತೀತ ರಾಷ್ಟ್ರವಂದರೇನು?
8. What is Government?
ಸರ್ಕಾರ ಎಂದರೇನು?
9. Write the meaning of Democracy.
ಪ್ರಜಾಪ್ರಭುತ್ವದ ಅರ್ಥ ಬರೆಯಿರಿ.
10. What is Federal Government?
ಸಂಯುಕ್ತ ಸರ್ಕಾರ ಎಂದರೇನು?
11. Name the two houses of the Indian Parliament.
ಭಾರತದ ಪಾರ್ಲಿಮೆಂಟಿನ ಎರಡು ಸದನಗಳ ಹೆಸರನ್ನು ತಿಳಿಸಿ.
12. What are the Qualification to become a Governor?
ರಾಜ್ಯಪಾಲರಾಗಬೇಕಾದಲ್ಲಿ ಇರಬೇಕಾದ ಅರ್ಹತೆಗಳನ್ನು ತಿಳಿಸಿ.

SECTION - B/ವಿಭಾಗ - ಬಿ

Answer **any two** of the following in medium size answers : (2 × 10 = 20)

ಕೆಳಗಿನ ಯಾವುದಾದರೂ ಎರಡು ಪ್ರಶ್ನೆಗಳಿಗೆ ಮಧ್ಯಮ ಗಾತ್ರದ ಉತ್ತರಗಳನ್ನು ಬರೆಯಿರಿ :

13. Explain the powers and functions of Chief Minister.
ಮುಖ್ಯ ಮಂತ್ರಿಯವರ ಅಧಿಕಾರ ಮತ್ತು ಕಾರ್ಯಗಳನ್ನು ವಿವರಿಸಿ.
14. Explain the kinds of Fundamental Rights.
ವಿಭಿನ್ನ ಪ್ರಕಾರಗಳ ಮೂಲಭೂತ ಹಕ್ಕುಗಳನ್ನು ವಿವರಿಸಿರಿ.
15. Discuss the composition, powers and functions of Legislative Assembly.
ವಿಧಾನ ಸಭೆಯ ರಚನೆ, ಅಧಿಕಾರ ಮತ್ತು ಕಾರ್ಯಗಳನ್ನು ವಿವರಿಸಿ.
16. Explain the preamble of the Indian Constitution.
ಭಾರತದ ಸಂವಿಧಾನದ ಪ್ರಸ್ತಾವನೆಯನ್ನು ವಿವರಿಸಿರಿ.



SECTION - C/ವಿಭಾಗ - ಸಿ

Answer **any two** of the following lengthy answers :

(2 × 15 = 30)

ಕೆಳಗಿನ ಯಾವುದಾದರೂ ಎರಡು ಪ್ರಶ್ನೆಗಳಿಗೆ ದೀರ್ಘ ಉತ್ತರ ಬರೆಯಿರಿ :

17. Explain the powers and functions of President of India.
ಭಾರತದ ರಾಷ್ಟ್ರಾಧ್ಯಕ್ಷರ ಅಧಿಕಾರ ಮತ್ತು ಕಾರ್ಯಗಳನ್ನು ವಿವರಿಸಿ.
18. Discuss the acquisition and Termination of Citizenship.
ಪೌರತ್ವವನ್ನು ಪಡೆಯುವ ಮತ್ತು ಕಳೆದುಕೊಳ್ಳುವ ವಿಧಾನಗಳನ್ನು ವಿವರಿಸಿ.
19. Explain the composition powers and functions of Rajya Sabha.
ರಾಜ್ಯ ಸಭೆಯ ರಚನೆ ಅಧಿಕಾರ ಮತ್ತು ಕಾರ್ಯಗಳನ್ನು ವಿವರಿಸಿ.
20. Describe the salient features of Indian Constitution.
ಭಾರತದ ಸಂವಿಧಾನದ ಲಕ್ಷಣಗಳನ್ನು ವಿವರಿಸಿ.