

ತೃತೀಯ ಸೆಮಿಸ್ಟರ್ ಬಿ.ಸಿ.ಎ ಪದವಿ ಪರೀಕ್ಷೆ

ಡಿಸೆಂಬರ್ 2025/ಜನವರಿ 2026

(SEP 2024 ರ ಸ್ಥಿರ)

ಕನ್ನಡ ಭಾಷಾ ಪತ್ರಿಕೆ - 2

SBC- 0010: ಗಣಕ ಸಿರಿ - 2

ಸಮಯ: 3 ಗಂಟೆಗಳು

[ಗರಿಷ್ಠ ಅಂಕಗಳು: 80]

ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಸೂಚನೆಗಳು:

1. ವಿದ್ಯಾರ್ಥಿಗಳು ಪ್ರಶ್ನೆ ಸಂಖ್ಯೆಗಳನ್ನು ಸ್ಪಷ್ಟವಾಗಿ ಬರೆಯಬೇಕು.
2. ಪ್ರಶ್ನೆ ಸಂಖ್ಯೆ/ಉಪ ಪ್ರಶ್ನೆ ಸಂಖ್ಯೆಗಳಲ್ಲದ ಉತ್ತರಗಳನ್ನು ಮೌಲ್ಯೀಕರಿಸಲಾಗುವುದಿಲ್ಲ.
3. ಪ್ರಶ್ನೆ ಸಂಖ್ಯೆಗಳನ್ನು ಮಾರ್ಕಿಂಗ್‌ನಲ್ಲಿಯೇ ಸ್ಪಷ್ಟವಾಗಿ ಬರೆಯಬೇಕು.

೧. ಆ. ಆದ ಪ್ರಶ್ನೆಗಳಿಗೆ ಮೂರು - ನಾಲ್ಕು ಸಾಲುಗಳಲ್ಲಿ ಉತ್ತರಿಸಿ:

6 x 2 = 12

- 1) ಕನ್ನಡ ಪದಗಳು ಹಾಡುವುದನ್ನೆಲ್ಲಾ ನಿಲ್ಲಿಸಿ ಬಿಡಬೇಕು ಎಂದಾಗ ರತ್ನನ ಪ್ರತಿಕ್ರಿಯೆ ಏನು?
- 2) 'ಹೃದಯ ಸಮುದ್ರ' ಕವಿತೆಯಲ್ಲಿ ಕವಿಯು ಅಧ್ಯಾತ್ಮ ಸಾಧಕನ ಹೃದಯವನ್ನು ಸಮುದ್ರಕ್ಕೆ ಹೇಗೆ ಹೋಲಿಸಿದ್ದಾರೆ?
- 3) ರಾಮಧಾನ್ಯ ಚರಿತ್ರೆಯ ಮೂಲಕ ಕನಕದಾಸರು ಯಾವ ಸಂದೇಶವನ್ನು ನೀಡಿದ್ದಾರೆ?
- 4) ಘನುಮೋಕಾ ಅವರು ಪ್ರಕೃತಿ ರಹಸ್ಯದ ಬಗ್ಗೆ ನೀಡುವ ಸಲಹೆ ಯಾವುದು?
- 5) 'ದರ್ಶನ' ಕವಿತೆಯಲ್ಲಿರುವ ದರ್ಶನ ಪದವು ಏನನ್ನು ಸೂಚಿಸುತ್ತದೆ?
- 6) 'ಹಾರ್ವೆಕ್ಟಿನ ಕಟ್ಟಕಟೆಯ ಸ್ವಗತ' ಲೇಖನದಿಂದ ನಾವು ಕಲಿಯಬೇಕಾದ ಪಾಠವೇನು?
- 7) ಕಾಡುಗೊಲ್ಲತಿಯರ ಪಾಡಿಗೆ ಕಾರಣವೇನು?
- 8) ಜೀಮೂತನು ತನ್ನ ಜೀವನವನ್ನೇ ಹದ್ದಿಗೆ ಅರ್ಪಿಸುವುದು ಏನನ್ನು ಸೂಚಿಸುತ್ತದೆ?

ಆ. ಎಂಟು ಪದಗಳಿಗೆ ಅರ್ಥ ಬರೆಯಿರಿ:

8 x ½ = 04

- | | | | | | |
|---------|---------|--------------|-----------|------------|---------------|
| 1) ಖತ್ನ | 2) ಉರಿ | 3) ಹರಿದ್ವರ್ಣ | 4) ನೆಲ್ಲು | 5) ವಾಯಸ | 6) ತುಮುಲ |
| 7) ಒರಕೆ | 8) ಗಮ್ಯ | 9) ಮನ್ವಂತರ | 10) ದರ್ದ | 11) ಒಕ್ಕಲು | 12) ತಾದಾತ್ಮ್ಯ |

೨. ನಾಲ್ಕು ವಿಷಯಗಳಿಗೆ ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ:

4 x 3 = 12

- 1) ನೆಗಡಿ
- 2) ರಾಗಿ
- 3) ಸುಖದೂರು
- 4) ತಿರುಕಣ್ಣ
- 5) ದೀಯಮ್ಮ
- 6) ಮಲ್ಲಿಕಾ

೩. ನಾಲ್ಕನ್ನು ಕುರಿತು ಸಂದರ್ಭ - ಸ್ವಾರಸ್ಯ ಬರೆಯಿರಿ:

4 x 3 = 12

- 1) 'ಲೇ, ಸಂಗಪ್ಪ....ಕಪಲಿ, ನಮ್ಮ ತೋಟದ ಕಡಿಗೆ ಬರದಂಗ ನೋಟೊರಮ್ಮೋ....'
- 2) "ಪರಿಮಳದ ಚಂದನದ ತರುವಿಗೆ ಸರಿಯೆ ಒಣಗಿದ ಕಾಷ್ಠ"

ಮುಂದುವರಿದಿದೆ.....2

**Third Semester BSW, BCA, BBA, BBA (T&T) Degree
Examinations**

December 2025 / January 2026

(SEP Scheme)

SANSKRIT Language Group I Paper – III

**SBC0020 / SMC0020 / SBC0020 : Ayodhya Kanda in Champuramayana of
Bhojaraja and Grammar**

Time: 3 hrs.

Max.Marks:80

Instruction to the Candidates :

1. The students should legibly write Section number along with question numbers.
2. The answers without Section number and question numbers will not be valued.
3. The question numbers should be legibly written within the margin only.
4. Questions in Sanskrit should be answered in Sanskrit only with Devanagari Script.

PART – A

1. दशानां प्रश्नानां संस्कृतभाषायामेव उत्तरं लिखत ।

10X1=10

a) चम्पूरामायणस्य कर्ता कः ?

a) कालिदासः ।

b) दण्डी ।

c) भोजराजः ।

d) भारवि ।

b) चम्पूरामायणे कति काण्डानि सन्ति ?

a) षड् ।

b) द्वे ।

c) चत्वारि ।

d) पञ्च ।

c) रामस्य माता का ?

a) जानकी ।

b) कौसल्या ।

c) कैकेयी ।

d) सुमित्रा ।

d) दशरथस्य कति पुत्राः सन्ति ?

a) त्रीणि ।

b) चत्वारि ।

c) पञ्च ।

d) षड् ।

- e) दशरथस्य राजधानी का ?
 a) काशी । b) मथुरा ।
 c) अयोध्या । d) विदिशा ।
- f) मिथिलाधिपतेः नामधेयम् किम् ?
 ब) जनकः । b) दशरथः ।
 c) भरतः । d) दण्डः ।
- g) सीता कस्य पुत्री ?
 a) जनकस्य । b) रावणस्य ।
 c) सुकेतोः । d) सुन्दस्य ।
- h) लक्ष्मणस्य माता का ?
 a) कौसल्या b) कैकेया ।
 c) सुमित्रा । d) कमला ।
- i) विदर्भस्य राज कः ?
 a) श्रीरामः । b) भोजः ।
 c) अशोकः । d) उदयनः ।
- j) चम्पूकाव्यं किं इत्यभिधीयते ?
 a) गीतनृत्यमम् । b) गीतगानमयम् ।
 c) गपद्यमयम् । d) नाट्यमयम् ।
- k) निषादाधिपतिः कः ?
 a) गुहः । b) दशरथः ।
 c) श्रीरामः । d) लक्ष्मणः ।
- l) कैकेय्याः पुत्रस्य नामधेयम् किम् ?
 a) रामः । b) लक्ष्मणः ।
 c) भरतः । d) शत्रुघ्नः ।

PART - B

2. ಯಾವುದಾದರೂ ನಾಲ್ಕಕ್ಕೆ ಲಘು ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ.

Write short notes on any FOUR of the following.

4X5=20

- a) भरतः ।
 - b) सुमंत्रः।
 - c) दशरथः ।
 - d) श्रीरामः ।
 - e) सीता ।
 - f) कैकेयी ।
3. ಯಾವುದಾದರೂ ಮೂರನ್ನು ಉತ್ತರಿಸಿರಿ. ಯಾವುದಾದರೂ ಮೂರು ಶ್ಲೋಕಗಳನ್ನು ಭಾಷಾಂತರಿಸಿ ವಿವರಿಸಿರಿ.

Translate and explain any THREE Shlokas of the following :

3X 4= 12

- a) गच्छता दशरथेन निर्वृति भूभुजामसुलभ भुजबलात् ।
मातुलस्य नगरे युधाजितः स्थापितौ भरतलक्ष्मणानुजौ ।
- b) विदितमेव हि भवतां शिवतातिमेव मति वधनाः सुपथा सं च ।
रमाणाः प्राणिनां दयमानमानसा मानधनाः यश : समर्जनजागरुकाः
- c) तस्मादस्माभिरपि तेषां मनीषामनुसरमाणैरेतावन्त ।
कालं पारिमा लिताः किल सकलाः प्रजा ॥
- d) भवतामभ्युपगमानां निगमानां प्रतीपगामिनीं पदवी ।
न प्रत्येति खलु लोकस्तदस्ति किं चिदभ्यर्थनीयम् ॥
- e) आनन्दबाष्प विसरो वदने प्रजानामाविर्बभूव ।
मकरन्द इवाक्षा वन्दे निनादाकर्णन इति पाठान्तरम् ॥

PART - C

4. ಯಾವುದಾದರೂ ಎರಡನ್ನು ಸಂದರ್ಭ ಸಹಿತ ವಿವರಿಸಿ.

Annotate any TWO of the following.

2X 4= 8

- a) प्रक्षाल्य चक्षुरिव वीक्षितुमादरेण ।
- b) तवोत्तमाङ्गे मुकुटं विधातुमह्नाय तिष्ठे दिवसे यतिष्ठे ।
- c) कैकेय्याः सा हृदयमदयं मन्थरा निर्ममन्थ ।
- d) अन्यस्य वन्यवृत्त्यैव वने रामस्य वर्तनम् ।

PART - D

ಈ ಕೆಳಗಿನ ಯಾವುದಾದರೂ ಮೂರು ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿ.

Answer any THREE of the following questions.

3X 10= 30

5. ಭೋಜರಾಜನ ದೇಶ, ಕಾಲ, ಕೃತಿಗಳನ್ನು ಕುರಿತು ಒಂದು ಪ್ರಬಂಧವನ್ನು ಬರೆಯಿರಿ.

Write an essay on the place date and work of great poet of Bhojaraja.

6. ರಾಮ, ಲಕ್ಷ್ಮಣ ಹಾಗೂ ಸೀತೆ ವನವಾಸಕ್ಕೆ ಹೋಗುವ ಸಂದರ್ಭ ಚರ್ಚಿಸಿರಿ.

Discuss about the incident of Rama, Laxmana and Sita went into Vanavasa.

7. ಪಂಚ ಚಂಪೂ ಕಾವ್ಯಗಳ ಬಗ್ಗೆ ಒಂದು ಪ್ರಬಂಧ ಬರೆಯಿರಿ.

Write an essay on पञ्च चम्पूकाव्यानि ।

8. ಚಂಪೂರಾಮಾಯಣದ ಆಯೋಧ್ಯಾ ಕಾಂಡದ ಸಾರಾಂಶವನ್ನು ವಿವರಿಸಿ.

Summarize the story of Ayodhyakanda of Champuramayana

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Third Semester BCA Degree Examinations

December 2025 / January 2026

HINDI Language

(SEP Scheme)

SBC0030 : Paper III

(काव्य कलश और सरकारी पत्राचार)

Time: 3 hrs.]

[Max.Marks:80

Instruction to the Candidates :

1. The students should legibly write Section number along with question numbers within the margin ONLY.
2. The answers without Section number and question numbers will not be valued.
3. Do not write or mark anything (except register number) on the question paper.

SECTION - A

I. इन प्रश्नों के लिए चार विकल्प दिए गए हैं उनमें से सही उत्तर चुनकर लिखिए ।

10×1=10

- 1) गौतम बुद्ध ने किस के लिए परिवार त्याग दिया था ?
a) धन के लिए b) सिद्धि के लिए
c) पत्नी के लिए d) पुत्र के लिए
- 2) जयशंकर प्रसाद द्वारा रचित कविता का नाम क्या है ?
a) किरण b) बीन भी हूँ
c) जो बीत गई d) यह दीप
- 3) 'किरण' कविता के द्वारा क्या दूर कर सकते हैं ?
a) शाम b) अंधकार
c) प्रकृति को d) रास्ते को
- 4) भिक्षुक के साथ कितने बच्चें थे ?
a) पाँच b) तीन
c) दो d) आठ

Contd...2

- 5) 'अंकाल दर्शन' कविता के कवि कौन हैं ?
 a) अज्ञेय
 b) हरिवंशराय बच्चन
 c) धूमिल
 d) महादेवी वर्मा
- 6) विश्व कान लगाकर क्या सुनेगा ?
 a) सीतार का मधुर स्वर
 b) वीणा का मधुर स्वर
 c) गीत का स्वर
 d) संगीत का स्वर
- 7) बच्चे तो बेकारी के दिनों की क्या हैं ?
 a) खजाने
 b) धन
 c) बरकत
 d) खुशी
- 8) जीवन में एक क्या था ?
 a) चाँद
 b) सूर्य
 c) सितारा
 d) आकाश
- 9) भवानी प्रसाद मिश्र द्वारा रचित कविता का नाम क्या है?
 a) मोचीराम
 b) गीत फरोश
 c) यह दीप
 d) तुम गा दो
- 10) 'बीती विभारी जाग रीं' कविता में कवि किसका वर्णन करते हैं?
 a) प्रकृति
 b) सूर्य
 c) लोगों का
 d) बच्चों का

SECTION - B

II. किन्हीं पाँच अवतरणों की सप्रसंग व्याख्या कीजिए :-

5X 5= 25

- 1) "सिद्धि- हेतु स्वामी गये, यह गौरव की बात;
 पर चोरी-चोरी गये, यही बड़ा व्याघात ।

Contd...3

- 2) "अधरों में राग अंमद पिए,
अलकों में मलयज बंद किए -
तू अब तक सोई है आली।
आँखों में भरे बिहाग री !"
- 3) "चपल ! ठहरो, कुछ लो विश्राम, चल चुकी हो पथ शून्य अनन्त
सुमन-मन्दिर के खोलो द्वार जगे फिर सोया वहाँ वसन्त।"
- 4) "वर दे वीणा वादिनी, वर दे, वर दे ।
प्रिय स्वतंत्र रव - अमृत मंत्र नव भारत में भर दे !"
- 5) "साथ दो बच्चे भी हैं सदा हाथ फैलाए,
बाए से वे मलते हुए पेट चलते हैं,
और दाहिना दया-दृष्टि पाने की ओर बढ़ाए।"
- 6) "मुझमें हैं देवत्व जहाँ पर
झुक जाएगा लोक वहाँ पर,
पर न मिलेंगे मेरी दुर्बलता को अब दुलारानेवाले !
बीते दिन कब आने वाले !"
- 7) "वह कच्चा पीनेवाला है
जिसकी ममता घट - व्यालों पर
जो सच्चे मधु से जला हुआ
कब रोता है, चिल्लाता है !
जो बीत गई सो बात गई"
- 8) "जी हाँ हुजुर, मैं गीत बेचता हूँ
मैं तरह तरह के गीत बेचता हूँ।
मैं सभी किसिम के गीत बेचता हूँ ।"

SECTION - C

III. किन्हीं पांच प्रश्नों के उत्तर लिखिए:

5×5=25

- 1) 'सखी वे मुझसे कहकर जाते' कविता का सारांश लिखकर उसकी विशेषताओं पर प्रकाश डालिए ।
- 2) 'किरण' कविता के भावार्थ लिखिए ।
- 3) 'भिक्षुक' के प्रति कवि ने मार्मिक वेदना को किस तरह विशेषलेषण किया है ?
- 4) 'बीते दिन कब आने वाले' कविता का भावार्थ लिखिए ।
- 5) 'गीत-फरोश' कविता में कवि किस - किस तरह की कविता बेचना चाहते हैं ? विवरण के साथ प्रस्तुत कीजिए ।
- 6) 'बीती विभारी जाग री' कविता का भावार्थ लिखिए ।
- 7) 'अकाल दर्शन' कविता में कवि का मूल भावना का विश्लेषण कीजिए ।
- 8) 'जो बीत गई सो बात गई' कविता का भावार्थ लिखिए ।

SECTION - D

IV. नीचे दिये गये प्रश्नों के उत्तर लिखिए :-

2X 10= 20

- 1) सामान्य सरकारी पत्र किसे कहते हैं ? उसके एक नमूना प्रस्तुत कीजिए ।

अथवा

अधिसूचन किसे कहते हैं ? उसके एक नमूना प्रस्तुत कीजिए ।

- 2) 'जापन' पत्र किसे कहते हैं ? नमूना प्रस्तुत कीजिए ।

अथवा

'परिपत्र' पर टिप्पणी लिखिए ।

Third Semester BCA Degree Examinations

DECEMBER 2025 / JANUARY 2026

(SEP 2024 - 25 Syllabus)

ENGLISH LANGUAGE - III

**PAPER – III: [SBC 0080] ENLIGHTENMENT AND ENGLISH
COMMUNICATION AND SOFT SKILLS**

Time: 3 hrs]

[Max. Marks: 80

Instructions to Students:

- 1) Write the section and question numbers correctly and legibly within the margin.
- 2) Do not repeat the answers. In case of repetition, only the first answer will be considered for awarding marks.
- 3) Answer to one-mark question should not exceed one sentence.
- 4) Do not write anything (except register number) on the question paper.

SECTION – A

(PROSE)

I. A) Answer any TWO of the following in about a page and a half each: 2 x 8 = 16

1. Discuss the message conveyed by Maxim Gorky through the story 'The Mother of a Traitor'.
2. Explain various psychological causes of unhappiness in Russell's essay 'What Makes People Unhappy'?
3. Discuss how Premchand's 'The Voice of God' explores the conflict between religious faith and social justice.

B) Write short notes on any TWO of the following:

2 x 4 = 08

1. Sketch the character Savitri.
2. Significance of the title 'The Mother of a Traitor'.
3. The relationship between law, morality and divine justice in 'The Voice of God'?

SECTION – B

(POETRY)

II. A) Annotate any TWO of the following:

2 x 5 = 10

1. my love feeds on your love, beloved,
and as long as you live it will be in your arms
without leaving mine.

Contd.....2

2. A mind at peace with all below,
A heart whose love is innocent!
3. I say,
stay down, do you want to mess
me up?

B) Answer any TWO of the following in about a page and a half each: $2 \times 8 = 16$

1. Explain the importance of human attitude in Sri Purandara Das's Keerthana.
2. Discuss the vastness of divine knowledge and experience in 'Would a Circling Surface Vulture' ?
3. Critically analyse the poem 'She Walks in Beauty'

SECTION - C
(WRITING SKILLS)

III. 1) Explain the meaning of any SIX expressions in one or two sentences each: $6 \times 1 = 6$

- a) Ophthalmologist
- b) UPI
- c) KYC
- d) Speed Post
- e) E-mail
- f) Passport
- g) Anthology
- h) Catalogue

2) Use any SIX of the following idioms in your own sentences:

$6 \times 1 = 6$

- a) Apple of one's eyes
- b) Beat around the bush
- c) Break the ice
- d) Black and white
- e) Kick the bucket
- f) Once in a blue moon
- g) Hit the sack
- h) No pain, no gain

- 3) Write a letter to the principal of your college requesting to provide drinking water facility in the college. 6
- 4) Write a letter of Application with C.V for the post of English teacher in Government High School, Shikaripura-577427. You are Yasmita, House No. 50. Vinayak Nagar, Shikaripura-577427. 6
- 5) **Read the following passage carefully. Write a précis of the given passage and give a suitable title.** 6

Wise managers look far beyond the immediate horizon. They try to visualize in terms of money the savings that this additional expenditure will bring them in the future. This additional expenditure might lead to a better quality product, which would mean higher sales. Additional expenditure might result in fewer breakdowns; this, in turn, would lead to a saving on maintenance costs and also to a higher volume of out-turn. Additional expenditure might lead to greater speed in work. Another advantage of additional expenditure may be less frustration and nervous strain; very important factors, but factors that cannot be measured in terms of money. (103 words)

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**Third Semester B.C.A. Degree Examination
December 2025/January 2026
(SEP Scheme)**

PAPER : (SBC0230) : COMPUTER COMMUNICATION & NETWORKS

Time : 3 Hours

Max. Marks : 80

Instructions to Students:

1. The student should legibly write Section number along with question numbers within the margin **ONLY**.
2. The answers without Section number and question numbers will not be valued.
3. Do not write anything (except register number) on the question paper.
4. All sections are compulsory.
5. Draw neat labeled diagram & necessary.

SECTION - A

Answer all the following questions:

2x10=20

1.
 - a) Define Computer Networks, Expand LAN.
 - b) Define Protocol, which is the protocol commonly used in internet?
 - c) List any two difference between OSI and TCP.
 - d) Write a note on coaxial cable.
 - e) List types of Error, Explain any one.
 - f) Write even parity and odd parity for the data 10011.
 - g) Mention any two difference between Network and transport layer.
 - h) Expand CRC.
 - i) Expand TCP and UDP.
 - j) Define congestion, mention any one congestion control algorithm.

SECTION - B

Answer any SIX questions of the following

5x6=30

2. List and explain the applications of Computer Networks.
3. Explain different types of Network topologies.
4. Explain any two Transmission Media.
5. Differentiate between Packet Switching and circuit switching.
6. Explain data link layer design issues.
7. Discuss Hamming Code in error correction.
8. Explain Transport service primitives.
9. Explain general principles of congestion control.

SECTION - C

Answer any THREE of the following questions:

10x3=30

10. a) Explain different types of Computer Networks.
b) Explain OSI reference model. **(5+5)**
11. Write short notes on
a) Data, signal and data rate limit.
b) Wireless transmission. **(5+5)**
12. a) Explain polynomial codes-CRC.
b) Explain Simplex stop-and-wait protocol. **(5+5)**
13. a) What are routing algorithm? Explain Distance vector Routing Algorithm.
b) Define traffic shaping, Explain token Bucket algorithm. **(5+5)**

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Third Semester B.C.A. Degree Examination
December 2025/January 2026
(SEP Scheme)

Paper : (SBC 0210) : Database Management System

Time : 3 Hours

Max. Marks : 80

Instructions to Students:

1. The student should legibly write Section number along with question numbers within the margin ONLY.
2. The answers without Section number and question numbers will not be valued.
3. Do not write anything (except register number) on the question paper.

SECTION - A

Answer all the following questions:

2x10=20

1.
 - a) Distinguish between a Data model and a Database Schema.
 - b) Define structural constraints in ER modeling with an example.
 - c) Explain weak entity type.
 - d) Write the relational algebra expression for :
"Find names of employee working in department 10".
 - e) Define nested sub query. Give an example.
 - f) What is Boyce Codd Normal Form.
 - g) Mention the difference between lossless join decomposition and dependency preservation.
 - h) What are Literals in PLSQL.
 - i) Explain any Two operators in PLSQL.
 - j) Write the syntax of CASE statement in PLSQL. Give example to CASE statement.

SECTION - B

Answer any SIX questions of the following

5x6=30

2. Explain different type of Database Users.
3. Construct an ER diagram for Hospital database with entities: Doctor, Patients, Ward and include appropriate relationships with constraints.
4. Explain different types of Keys in relational model with an example.
5. For relations STUDENT (Roll No, Name, Dept.) and ENROLL (RollNo, CourseID).

Write relational algebra expression to:

- (i) Find all students enrolled in course C1.
- (ii) Find names of students not enrolled in any course.

6. Explain different Aggregate functions with syntax and examples.
7. What is Functional Dependency, Prime and non prime attributes? Give example to each.
8. Write a PL/SQL block that accepts an employee number and displays salary.
If employee not found, raise and handle exception.
9. Explain different types of loop constructs in PL/SQL with syntax and examples.

SECTION - C

Answer any THREE of the following questions:

10x3=30

10. a) Explain various components of DBMS architecture with a neat diagram. **(6 Marks)**
b) Explain how mapping cardinalities are represented in ER diagrams. Give an example to each. **(4 Marks)**
11. a) Discuss the different types of join operations in relational algebra with examples. **(6 Marks)**
b) With an example relations, explain Union and intersection operations in relational algebra. **(4 Marks)**
12. a) Explain anomalies in database design with suitable example. **(5 Marks)**
b) Explain 1NF and 2NF with an proper example. **(5 Marks)**
13. a) Explain exception handling in PL/SQL with example of predefined exceptions. **(5 Marks)**
b) Write a PLSQL program to check a given number in Palindrome or not. **(5 Marks)**

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Third Semester B.C.A. Degree Examination
December 2025/January 2026
(SEP Scheme)

PAPER : (SBC0220) : DESIGN AND ANALYSIS OF ALGORITHMS

Time : 3 Hours

Max. Marks : 80

Instructions to Students:

1. The student should legibly write Section number along with question numbers within the margin **ONLY**.
2. The answers without Section number and question numbers will not be valued.
3. Do not write anything (except register number) on the question paper.

SECTION - A

Answer all the following questions:

2x10=20

1.
 - a) Define time complexity and space complexity.
 - b) List various algorithm design strategies.
 - c) Define recursive and non-recursive algorithms.
 - d) Find the recurrence relation of binary search algorithm.
 - e) Define the order of an algorithm. Write the order/time complexity of fractional knapsack algorithms.
 - f) Write the linear search algorithm.
 - g) Find the longest common subsequence for the following strings.
 - (i) "ABC" and "AXC"
 - (ii) "AGGTAB" and "GTXAYB"
 - h) Define Greedy and Divide and Conquer techniques.
 - i) Describe two graph representation methods.
 - j) Which data structure is used for implementing Breadth First Search and Depth First Search methods.

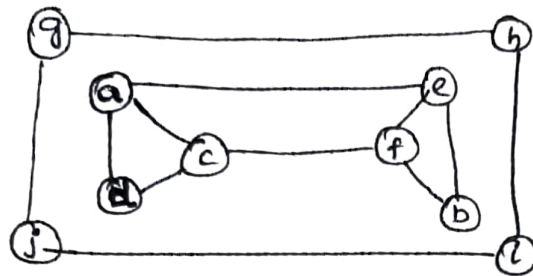
SECTION -B

Answer any SIX questions of the following

5x6=30

2. Briefly explain the steps in analysis framework of an algorithm.
3. List the algorithm design techniques and explain the limitations of each.
4. Give the general plan for analysing the efficiency of the recursive algorithm. Explain it for the algorithm to calculate $n!$

5. Write the algorithm for Merge sort method. Write its worst case and make use of this algorithm to sort the list of numbers [5, 3, 1, 9, 8, 2, 4, 7].
6. Define Brute Force technique. What are its advantages and disadvantages. Explain this technique with the context of sequential search algorithm.
7. Explain binary search algorithms with suitable example.
8. Write an algorithm to find longest common subsequences of two strings. Also analyse its efficiency.
9. Find the vertices visited in graph traversal of following graph using DFS & BFS methods.



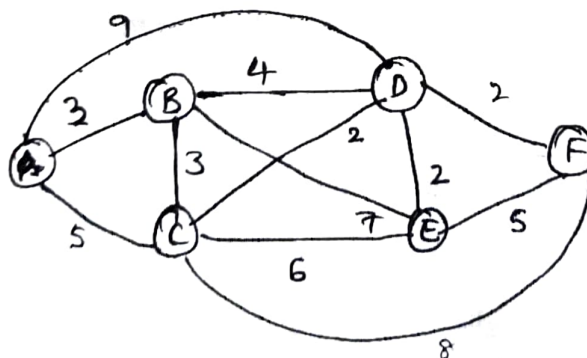
SECTION - C

Answer any THREE of the following questions:

10x3=30

10. What is an algorithm? Explain the fundamental steps of algorithm problem solving.
11. a) Explain the formal and informal definition of asymptotic notations.
b) Derive an expression for the average case analysis of sequential search algorithm.
12. Explain Greedy approximation algorithm to solve fractional knapsack problem and analyse its efficiency.
13. Write Floyd-Warshal algorithm to find the solution for all pair shortest path problem. Illustrate this algorithm for the following undirected graph.

(6+4)



**Third Semester BCA/B.Sc. Degree Examinations
December 2025 / January 2026
(SEP Scheme)**

**COMPUTER SCIENCE
(SEC 6380) : E - Commerce - (Elective - I)**

Time : 2 Hours

Max. Marks : 40

Instructions to Students:

- 1. The student should legibly write Section number along with question numbers within the margin ONLY.**
- 2. The answers without Section number and question numbers will not be valued.**
- 3. Draw a neat & labeled diagram wherever necessary.**
- 4. Do not write anything (except register number) on the question paper.**

SECTION - A

I. Answer ALL the following questions: 2x5=10

1. List safe Online Shopping Practices.
2. List any two popular online shopping websites and mention one feature each.
3. State any two benefits of E-commerce.
4. Explain Search Engine Marketing.
5. Explain Intellectual Property Rights (IPR).

SECTION - B

II. Answer any SIX of the following questions: 5x6=30

6. Differentiate E-Commerce and E-Business. Also list the limitations of E-Commerce.
7. Explain the various E-commerce business models with examples.
8. Describe different types of E-commerce platforms with examples.
9. Explain the process of building an E-commerce presence.
10. Explain Search Engine Optimization (SEO) and its relevance in E-commerce.
11. Describe the role of Social Media Marketing (SMM) in promoting E-Commerce.
12. Discuss common security threats faced by E-commerce websites and preventive measures.
13. Write a note on digital certificates and IPR.