

**Faculty of Commerce, Sciences, Business Management**

**B.Com/B.Sc/BBA II-Year, CBCS-III Semester Regular Examinations Jan- 2024**

**Subject: Professional Skills (SEC)**

**Time: 2 Hours**

**Max. Marks: 40**

**Section - A**

**(2x4=8)**

**I. Answer any TWO of the following questions:**

- 1.** Write Objectives of Career skills?
- 2.** How do you write Business writing skills?
- 3.** What are the Basic writing skills?
- 4.** What are included in Resume?

**Section - B**

**(2x16=32)**

**II. Answer any TWO of the following questions:**

- 5.** Explain about Professional skills and it's types?
- 6.** Expand about Team skills?
- 7.** Write an importance of Resume writing?
- 8.** What are the Social and Cultural etiquettes?

**Faculty of Science**  
**B.Sc II-Year, CBCS-III Semester Regular Examinations Jan-2024**  
**PAPER: Python-I**

**Time: 2 Hours**

**Max Marks:40**

**Section-A**

**I. Answer any TWO of the following questions (2x5=10Marks)**

1. Write about Python Program Development Cycle.
2. List and explain String functions.
3. Math module in Python
4. Differentiate Global and Local variables

**Section-B**

**II. Answer the following questions (2x15=30Marks)**

5. (a) Write and explain *if*, *if-else*, *if-elif-else* statements with a program.

**(OR)**

(b) Explain nested looping structures.

6. (a) Demonstrate the use of functions with the help of a program.

**(OR)**

(b) Discuss about Exception Handling in Python.

\*\*\*\*\*

**Faculty of Commerce, Sciences, Business Management**  
**B.Com/B.Sc/BBA II-Year, CBCS-III Semester Regular Examinations Dec- 2023**  
**Subject: Theory of Equations (SEC)**

Time: 2 Hours

Max Marks: 40

## Section-A

I. Answer any two of the following questions

(2x5=10 Marks)

1. Find the Maximum or Minimum value of the polynomial  $3x^2 + 2x + 11$ .
2. Find the roots of the Equation  $x^3 - x^2 - 2x = 0$ .
3. Solve  $x^3 - 3x^2 - 16x + 48 = 0$  given that the sum of two of its roots being equal to zero.
4. Solve  $x^3 - 3x^2 - 6x + 8 = 0$  given the roots are in A.P.

## Section-B

II. Answer the following questions

(2x15=30 Marks)

5. (a) If  $\alpha + i\beta$  is one of the roots of  $f(x) = 0$  with real coefficients then show that  $\alpha - i\beta$  must be also be a roots of it.

( OR )

- (b) Solve the equation  $16x^3 - 40x^2 + 37x - 42 = 0$  two being the roots.

6. (a) If the roots of  $x^3 + 3px^2 + 3qx + r = 0$  are in A.P. then show that  $2p^3 - 3pq + r = 0$ .

( OR )

- (b) If the roots  $x^3 + 3px^2 + 3qx + r = 0$  are given in G.P. then show that  $p^3r = q^3$ .

\*\*\*\*\*

**Faculty of Commerce, Sciences, Business Management**

**B.Com/B.Sc/BBA II-Year, CBCS-III Semester Regular Examinations Dec- 2023**

**Subject: GENERAL ENGLISH**

**Time: 3 hours**

**Max Marks: 70**

**Section-A**

**I. Answer any Five from the following.**

**(5x4= 20 Marks)**

1. Use anagrams derived from each of the words below to fill in the blanks.
  - a) idea: Subash worked as an .....to the minister .
  - b) left: I .....a sharp pain in my legs .
  - c) lamb: The .....soon soothed the pain .
  - d) rental: Suman .....a lesson today .
2. Punctuate the following sentences using commas appropriately.
  - a) In the heat of summer afternoon our ceiling fan stopped.
  - b) As he entered the classroom he realized that he was late again.
  - c) Because the game was so one-sided we left early.
  - d) Before I leave I will give you my address and telephone number.
3. Fill in the blanks with the past tense/past participle forms of the verbs given in brackets.
  - a) English is.....(speak)all over the world .
  - b) Someone .....(steal)my pen yesterday.
  - c) Swathi has never .....(swim)in the river .
  - d) My mother has.....(cut)the vegetables.
4. Complete the table with suitable verb forms
 

a.Go .....	b.swim.....
c.Lend.....	d.steal.....
5. Match the idioms in the column A with their meaning in column B
 

<b>A</b>	<b>B</b>
a) Feeling blue	i) great fuss about nothing
b) beat the bush	ii)make people more relaxed and start a conversation
c) Break the ice	iii) avoid the main issue
d) Storm in a tea cup	iv) to feel sad
6. Write phonetic transcription for the following words
  - a) oven      b) onions      c) kangaroo      d) write
7. Expand the proverb 'Better late than never'.
8. Define preposition with any four examples.



**Section-B****II. Answer all questions (Internal choice)****(5x10=50 Marks)**

9. (a) i) Annotate the following (5M)  
 'If you find my answers satisfactory, will you give me five rupees?'
- ii) Describe the various sights of the bazaar mentioned in the poem. (5M)  
 (OR)
- (b) i) Read the following passage and answer the questions. (5M)  
 He had left the village without any previous thought or plan. If he had continued there he would have carried on the work of his forefathers –namely, tilling the land, living, marrying, ripening in his cornfield and ancestral home. But that was not be. He had to leave home without telling anyone, and he could not rest till he left it behind a couple of hundred miles. To a village it is great deal, as if an ocean flowed between.
- 1) Who is the speaker of the passage?  
 2) What is great deal to a villager?  
 3) What is meant by ancestral?  
 4) Write antonym for ripening?  
 5) What part of speech is 'Namely'?
- ii) How did the astrologer convince Guru Nayak about his future? (5M)
10. (a) i) Describe the political background and significance of the poem. (5M)  
 ii) Read the following passage and answer the questions that follow (5M)  
 What do you Weigh, O ye vendors?  
 Saffron and lentil and rice.  
 What do you grind, O ye maidens?  
 Sandalwood, henna, and spice.  
 What do you call, O ye pedlars? chessman and ivory dice .
- 1) Who is the speaker of the lines?  
 2) What are the vendors doing?  
 3) What is meant by vendors?  
 4) Write antonym for maidens?  
 5) What part of speech is the word 'weigh'?
- (OR)
- (b) i) Why the author called the forest nature made? (5M)  
 ii) Write phonetic transcription for the following words. (5M)  
 Rhythm, indict, entrepreneur, chandelier, chocolate
11. (a) i) Annotate the following (5M)  
 Forests are Nature's gift to us
- ii) Complete the following sentences using suitable phrasal verbs from the list given below. (5M)  
 cut off ,grow up, call off , think over, hand over
- a) Employees have decided to .....the strike.  
 b).....this noise, please!  
 c) He wants his son to .....and be a responsible man.  
 d) The robber ordered the people to .....the money.  
 e) You must..... the issues carefully.
- (OR)

(b)i) Annotate the following

What do you make, O ye gold smiths?

ii) Change voice of the following sentences. (5M)

a) The boy killed the spider.

b) She made a remarkable discovery.

c) The police caught the thieves.

d) The building was being searched.

e) The thief stole the bag.

12. (a) i) What is an Argumentative essay? Write an argumentative essay on 'should journalist be allowed to write about the private life of celebrities?' (5M)

ii) Fill in the blanks in the following sentences with suitable prepositions. (5M)

a) The bag is .....the top rack .....the cupboard.

b) Did you see the article .....the applications .....biotechnology?

c) Rini was angry .....Simon and spoke harshly .....him.

d) Shiksha spent a day .....her aunt .....12, Gandhi Nagar  
.....Nizamabad.

e) He is .....the committee.

(OR)

(b) i) What steps can be used for taking a good decision and write a few steps to overcome decision making barriers. (5M)

ii) Have you ever regretted not acting in time to achieve something? Write a note on the experience and on the lessons you learnt. (5M)

13. (a) i) What is problem solving? Write down the steps involved in problem solving (5M)

ii) Fill in the blanks with the past tense/past participle forms of the verbs given in the brackets. (5M)

a) Which mobile have you.....?(choose)

b) English is .....spoken (speak)all over the world .

c) Someone .....(steal)my pen yesterday.

d) Joni .....(blow)a balloon yesterday for her sister.

e) I.....(find)a diamond on the table.

(OR)

(b) i) Write an easy narrating an eventful cricket match. An exciting finish, a high scoring of runs/a hat trick the behavior of spectators \_all these can make a match interesting. Use these ideas in your essay. (5M)

ii) Expand the proverb 'Hope for the best but prepare for the Worst'. (5M)

\*\*\*\*\*



**Faculty of Commerce, Sciences, Business Management**  
**B.Com/B.Sc/BBA II-Year, CBCS-III Semester Examinations Dec- 2023**  
**Subject: Second Language Telugu**

Time: 3 hours

Max Marks: 70

అ భాగము ( సంగ్రహ సమాధానములు )

1. ఈ క్రింది వానిలో నాలుగు ప్రశ్నలకు సమాధానములు రాయండి. 4×5=20
1. "నీవు సంకటపడి యెదు దేవ పదవి యైన నేనొల్ల" సందర్భ సహిత వ్యాఖ్య రాయండి.
  2. "చదవబెట్టిరి వాని ఆచార్యు నొద్ద" సందర్భ సహిత వ్యాఖ్య రాయండి.
  3. "కానీ పాతాళ యంత్ర మాతనిలోని ఉహా" సందర్భ సహిత వ్యాఖ్య రాయండి.
  4. "ఈ అస్తంబును సామాన్యులపై ప్రయోగించరాదు" సందర్భ సహిత వ్యాఖ్య రాయండి.
  5. గోన బుద్ధారెడ్డి'ని పరిచయం చేయండి.
  6. వానమామలై వరదాచార్యులు.

ఆ భాగము ( వ్యాస రూప సమాధానాలు )

11. ఈ క్రింది వానిలో అన్ని ప్రశ్నలకు సమాధానాలు రాయండి. 5×10=50
7. ఈ క్రింది పద్యాలలో ఒకదానికి ప్రతిపదార్థ తాత్పర్యము రాసి,, వ్యాకరణాంకములను తెలపండి.
- (a) మనమున బక్షపాత గతి మాదస మానుము ధర్మనీతి వ  
 ర్తనముల రెండు దిక్కుల హితంబును బెంపును గల్గునట్టి చో  
 ప్పున విదురాది సజ్జనుల బుద్ధికి రా నుచితంబుతోడి మె  
 ల్గున బరుసందనంబునను భూపతులెల్ల నె రుంగ నాడుమీ!  
 లేదా
- (b) అంగో ద్వర్తన వేళ నీవు దరహాసాంకూరము ల్లోచనా  
 పాంగ ప్రాంతములందిగుర్వనోక సయ్యాటంబు గల్పించినా  
 యంగుళ్ళా భరణంబు పుచ్చుకొనవా?యా యుంగరం బిప్పుడే  
 శృంగారింపని చేత బావకునకున్ జేయన్ హ విధానమున్.
8. (a) 'గుణ నిధి' గుణశీలములను గురించి రాయండి.  
 లేదా  
 (b) విభిషణునికి శ్రీరాముడు కరణము ఇచ్చిన వృత్తాంతాన్ని తెలియజేయండి.
9. (a) "గుడిసెలు కాలిపోతున్నాయి" కావ్య సందేశాన్ని వివరించండి.  
 లేదా  
 (b) "గురుదక్షిణ పాఠ్యశాస్త్రి" పరిచయం చేయండి.
10. ఈ క్రింది వానిలో రెండింటికి లక్ష్య లక్షణ సమన్వయము చేయండి.
- a) ఉపమ అలంకారము.
  - b) శ్లేష అలంకారము

c) అక్షదూర్తులలోన నీ యనగు కొడుకు

దొరయునంతటి యక్షదూర్తుండు లేడు

క్షీతితలంబున యాగదీక్షితులలోన

కీర్తి నీ యట్టి యాగదీక్షితుడు లేడు

d) అతని కృపాంబు నిధిలోన మనుజేశ్వరుండు కమ్మర ఓలలార్చి.

11. ఈ క్రింది వానిలో రెండింటికీ లక్ష్య లక్షణ సమన్వయం చేయండి.

a) అంత్వానుప్రాస అలంకారము

b) ముక్త పదగ్రస్తము

c) అడిగెదనని కడువడిజను

నడిగిన దను మగుడ నుడుగడని నడయుడుగున్

d) వదలలేదు మాధవ మాధవ స్మృతులను



Marks-70

## भाग-I

निम्नलिखित किन्ही चार प्रश्नों के उत्तर दीजिए।

4×5=20

- 1) कबीरदास जी का कवि परिचय दीजिए ?
- 2) "काल करे सो आज कर -----  
बहुरि करेगा कब" दोहा का संदर्भ सहित व्याख्या कीजिए।
- 3) "नीच निचाई नहीं तजइ-----  
बिनु बिष भए न भुअंग दास की संदर्भ सहित व्याख्य कीजिए।
- 4) मेरा नया बचपन कविता का सारांश लिखिए ?
- 5) भारत कविता में बालक की धैर्यशाली पर प्रकाश डालिए लिखिए ?
- 6) हिंदी साहित्य का इतिहास में कितने काल है ?

## भाग-II

(5×10=50)

- 7) निम्न में से किसी एक कविता का सारांश लिखिए।  
अ) नवयुवकों से आ) भारत इ) फूल और काँटा  
1×10=10
- 8) निम्न में से किसी एक प्रश्न का उत्तर दीजिए।  
अ) आदिकाल की राजनीतिक, सामाजिक परिस्थियों पर प्रकाश डालिए ?  
आ) भक्ति काल की राजनीतिक, सामाजिक परिस्थियों पर प्रकाश डालिए ?  
1×10=10
- 9) किन्हीं दो कवियों पर टिप्पणी लिखिए ?  
अ) तुलसीदास आ) मैथिलीशरण गुप्त इ) सुभद्रा कुमारी चौहान ई) जयशंकर प्रसाद  
5×2=10
- 10) किसी एक विषय पर निबंध लिखिए।  
अ) स्वच्छता का महत्व आ) पर्यावरण इ) शिक्षा का महत्व  
1×10=10
- 11) निम्नलिखित दस वाक्यों को हिंदी में अनुवाद कीजिए।  
1×10=10
  - i) K.C.R is the chief Minister of our state Telangana.
  - ii) I am going to My Home
  - iii) Hindi is the India's national Language
  - iv) Hyderabad is the Telangana's Capital
  - v) Peacock is the India's national bird
  - vi) I am going to my village in the train
  - vii) Shahjahan Built Tag Mahal
  - viii) I Love My Parents
  - ix) I am a Hindi Teacher
  - x) Always be happy

Time: 3 hours

Max Marks: 70

**Section-A**

**I. Answer any FOUR from the following.**

(4x5=20 Marks)

1. चत्वारि प्रश्नाः समाधेयाः ।
1. श्लोकरय आषान्तरिकरणम् कुरुत ।  
यस्य ज्ञानदयासिन्धोरगाश्चस्यान्धा गुणाः ।  
सेव्यतामज्ञयोः क्षीरा स्वत्रियै चागृताय च ॥
2. स्पन्दर्षी व्याख्यात ।  
मा ते माता ? कस्ते पिता ? कथं वेदानामागमः ?
3. लिङ्गविभक्ति वचनानि प्रत्याभिजानीत ।  
1. जलमुञ्चु 2. वरिष्ठः 3. मरते 4. भगवता 5. भवति
4. स्पन्दर्षी व्याख्यात ।  
सुरा सुरगुरुः स्योत्र स्पपत्नीकारतपस्यति ।
5. सूर्यनारायणशास्त्रिपाण्डितस्य शास्त्रवैदुष्यं विवृणुत ।
6. लिङ्गविभक्ति वचनानि प्रत्याभिजानीत ।  
1. अहम् 2. मनः 3. गुणी 4. त्वम् 5. नाम

**Section-B**

**II. Answer all questions (Internal choice)**

(5x10=50 Marks)

7. सर्वे प्रश्नाः समाधेयाः । PART-B
- द्वयोः श्लोकयोः प्रतिपदार्थं तात्पर्यञ्च लिखत । आ. विशाखा
- (अ) प्रथमोपकृतं मरुत्वतः परिपुत्या लघु मन्यते भवान् ।  
गणयत्यवदानविस्मितो भवतः स्योपि न सक्रियागुणान् ॥  
(अथवा)

(21) अङ्कितपयोः मातुः शगर्दं निलम्बकेः सख्यः ।  
प्रतीदितुं सिद्धांशुं जन्मलासेन वार्षति ॥

8.

(22) उदेति पूर्वं बुधशुभं ततः फाल्गुनी एनोदयः प्रातःकान्तरं पयः ।  
निमित्तनौमितिकयोर्यं क्रमस्तव प्रसादय्य पुरस्तु सम्पदः ॥  
(अथवा)

(23) प्रवर्ततां प्रकृतिद्विताय पार्थिवः

स्वरस्वती श्रुतिमद्वतां मदीयताम् ।

ममापि च सपयतु नीललोहितः

पुनश्चिं परिगतशक्तिरात्मभूः ॥

9. "नवशल्मानि" इति पाठ्यांशस्य स्यादर्शं लिखत ?  
(अथवा)

प्रवर्ततां प्रकृतिद्विताय पार्थिवः इति पाठ्यांशस्य स्यादर्शं लिखत ?

10. देव मद्वतीयं कथा यदि कौतूहलम् आकर्षयताम् इति वैशम्पायनः  
कां कथाम् अत्रावयत् ? विवृणुत ?  
(अथवा)

चिन्तितोपन्नः कथं रामदासः अत्रावत्, तत्र इतिहासः कः ?  
विशदयत ।

11. द्वयोः शब्दौ स्वसु विशक्तिषु लिखत ।

अ) जलमुक्त्वा

आ) मरात्

इ) राजन्

ई) युष्मद्

\*\*\*\*\*



**Faculty of Commerce, Sciences, Business Management**  
**B.Com/B.Sc/BBA II-Year, CBCS-III Semester Examinations Dec- 2023**  
**Subject: Second Language Urdu**  
**Urdu Poetry & Prose**

Max Marks : 70

Time : 3 Hrs.

**SECTION 'A'**

4x5=20

نوٹ:- I مندرجہ ذیل سوالات میں سے کوئی چار (4) کے مختصر جوابات مطلوب ہیں

ہر سوال کے لئے پانچ (5) نشانات مختص ہیں۔

- (1) مثنوی کے لئے شاعری کے کتنے بحر مقرر ہیں؟
- (2) 'قصیدہ' کے معنی و مفہوم کی وضاحت کیجئے؟
- (3) شیخ ابراہیم ذوق کو خاقانی ہند خطاب کس نے دیا نوٹ لکھئے؟
- (4) داستان کے کہتے ہیں؟
- (5) انشائیہ کی تعریف بیان کیجئے؟
- (6) ناول کے اجزائے ترکیبی بیان کیجئے؟

**SECTION 'B'**

5x10=50

II تمام سوالات کے جوابات مطلوب ہیں۔

- (7) (a) قصیدہ نگاری کا تاریخی پس منظر کوا جا کر کیجئے۔ یا
- (b) داستان کے لئے اہم اجزائے ترکیبی پر مفصل نوٹ لکھئے۔
- (8) (a) نصوص کی سلیم سے گفتگو کا تجزیاتی مطالعہ پیش کیجئے۔ یا
- (b) سب رس کا ماخذ کیا ہے تفصیلی نوٹ لکھئے۔
- (9) (a) ناول کا تاریخی پس منظر بیان کیجئے۔ یا
- (b) انشائیہ "ذوق چائے نوشی" کا تجزیاتی مطالعہ پیش کیجئے۔
- (10) (a) ڈپٹی نذیر احمد کی ناول نگاری کی خصوصیات کو قلم بند کیجئے۔ یا
- (b) صفیہ اختر کے حالات زندگی بیان کرتے ہوئے ان کی مکتوب نگاری پر روشنی ڈالئے۔
- (11) (a) مثنوی "امن نامہ" کا خلاصہ تحریر کیجئے۔ یا
- (b) قصیدہ "درشان حمید الدولہ" میں نواب کی تعریف کن الفاظ میں کی گئی۔

Time: 3 Hours

Max. Marks: 70

## SECTION – A

I. Answer any SIX of the following questions.

(6 x 5 = 30 Marks)

1. Define convergent sequence and prove that every convergent sequence is bounded?
2. Test the convergent of the series  $\sum \frac{n}{n^3+3}$ .
3. If  $f(x) = 2x^2 + 1, \forall x \in R$  then prove that  $f$  is continuous on  $R$ . by using  $\epsilon - \delta$  definition.
4. If  $f$  is continuous on  $[a,b]$  then prove that  $|f|$  is continuous on  $[a,b]$ .
5. If  $f$  is differentiable at a point  $x = x_0$  then prove that  $f$  is continuous at  $x = x_0$ .  
What about its converse?
6. Evaluate (a)  $\lim_{x \rightarrow 0} \frac{\cos x - 1}{x^2}$  (b)  $\lim_{x \rightarrow \infty} \frac{x^2}{e^{3x}}$  by using L-Hospital's Rule.
7. Prove that every constant function is Riemann integrable on  $[a,b]$ .
8. Solve that  $\left| \int_{-2\pi}^{2\pi} x^2 \sin^8(e^x) dx \right| \leq \frac{16\pi^3}{3}$ .
9. Prove that every convergent sequence is a Cauchy sequence.
10. If  $f, g$  are continuous at  $x = x_0$  then prove that  $f+g$  and  $fg$  are also continuous at  $x = x_0$ .

## SECTION B

II. Answer the following questions.

(4 x 10 = 40 Marks)

- 11.(a) State and prove Squeeze (Sandwich) Theorem on Sequences.

**OR**

- (b) State and prove limit comparison Test in infinite series.

- 12.(a) Prove that If  $f$  is continuous on  $[a,b]$  then  $f$  is bounded on  $[a,b]$ .

**OR**

- (b) State and prove Root Location (Test) Theorem.

- 13.(a) State and prove Rolle's Theorem.

**OR**

- (b) Evaluate (i)  $\lim_{x \rightarrow \infty} \left(1 - \frac{1}{x}\right)^x$  (ii)  $\lim_{x \rightarrow 0} \frac{x^3}{\sin x - x}$  by using L-Hospital's Rule.

- 14.(a) Solve that If ' $f$ ' is continuous on  $[a,b]$  then ' $f$ ' is Riemann integrable on  $[a,b]$

**OR**

- (b) State and prove first fundamental theorem of Integral Calculus.

\*\*\*\*\*

**SECTION – A****I. Answer any SIX questions. All questions carry equal marks.****(6X5=30Marks)**

1. Explain about irrotational field.
2. Show that  $\vec{E} = -(\vec{\nabla} V)$ .
3. State and explain “Biot-Savart Law” and give its applications.
4. State “Ampere’s Law” and obtain its Expression.
5. State and explain Lenz’s law. Does it contradict the law of conservation of energy?
6. Derive Maxwell’s equation in free-space.
7. Explain and derive equation for “ $Q$ -Factor”. Why  $Q$  is called as ‘Figure of Merit’, give a short note.
8. Explain: “Norton’s Theorem”.
9. How many electrons must be added to an isolated conductor 10 cm in diameter to produce a field just outside the surface whose intensity is  $1.3 \times 10^{-3}$  N/C?
10. Find the reactance of a capacitor of capacity  $1\mu\text{F}$  at 1 KHz frequency.

**SECTION – B****II. Answer ALL questions. All questions carry equal marks.****(4X10=40Marks)**

11. a) State and prove Gauss’s theorem in integral and differential forms in electrostatics. (10)  
(OR)
- b) Define Electrical Potential. Derive potential due to a charged spherical conductor. (3+7)
12. a) Define magnetic induction ( $\vec{B}$ ). Derive  $\vec{B}$  due to a long straight current carrying conductor. (3+7)  
(OR)
- b) Define magnetic Force. Derive an expression for the magnetic force acting between two parallel current carrying conductors. (3+7)
13. a) What is ‘Self-Induction’? Define coefficient of self-induction. (3+7)  
(OR)
- b) Give the construction and theory of a moving coil Ballistic Galvanometer. Derive expressions for its charge sensitivity and current sensitivity. Write any two applications of it. (6+2+2)
14. a) Derive equation for the Growth and Decay of an electric current in L-R circuit. What is mean by the Time-Constant of the circuit? (10)  
(OR)
- b) Explain and derive the equation for  $\pi$  to  $T$  Network transformation. (10)



Time: 3 Hours

Max. Marks: 70

## SECTION – A

I. Answer any SIX questions. All questions carry equal Marks

(6 x 5 = 30 Marks)

1. Define Negative correlation and give with real life example?
2. Define Regression analysis?
3. For two attributes A&B, we have  $(AB)=8, (A)=18, (\alpha\beta)=5$  and  $N=35$ , calculate the coefficient of association ?
4. Define Association of attributes?
5. Define student t distribution and its applications?
6. Define most efficiency estimator?
7. Difference between an estimator and estimate ?
8. Explain confidence interval?
9. What are the difference between correlation and regression ?
10. Define Manifold classification of attributes ?

## SECTION B

II. Answer any ALL questions. All questions carry equal Marks

(4 x 10 = 40 Marks)

11. (a) Derive Spearman's formula for the rank correlation coefficient?

OR

- (b) Define regression coefficient? State and prove properties of regression coefficient?

12. (a) What do you understand by independence of attributes? Give a criterion of independence for attributes A and B?

OR

- (b) What is association of attributes and how it is measured? Establish a relationship between coefficient of association (Q) and coefficient of colligation (Y)?

13. (a) Explain the following?

- i) Population ii) Sample iii) Parameter iv) Statistics v) Sampling distribution vi) standard error

OR

- (b) Establish a relationship between F and
- $t$
- , F and Chi-Square distribution?

14. (a) Explain the maximum likelihood method of estimation state the properties of maximum likelihood estimators ?

OR

- (b) Let
- $x_1, x_2, \dots, x_n$
- be a random sample from a poisson distribution with parameter
- $\lambda$
- .

Find ML estimator of  $\lambda$  also find it's variance?

\*\*\*\*\*

Time: 3 Hours

Max. Marks: 70

**SECTION – A**

**I. Answer any SIX of the following questions.**

**(6 x 5 = 30 Marks)**

1. Define Algorithm. Write the Characteristics of Algorithm.
2. Write about Stack Abstract Data Type.
3. Define a Queue. Write the Applications of Queues.
4. Explain the Operations of Linked Lists.
5. What are Binary Search Trees? Explain.
6. Write a C++ Program to show Linear Search.
7. Write a short note on Hash Table Overflow.
8. Write a short note on Spanning Trees.
9. What is Pseudo Code? How to write Pseudo Code?
10. Write short note about Priority Queues.

**SECTION B**

**II. Answer the following questions.**

**(4 x 10 = 40 Marks)**

11. (a) Define Data Structures. Specify the Types of Data Structures. Explain the relationship among Data, Data Structures and Algorithms.

**OR**

- (b) Define a Stack. Write the Concepts of Stack. How to represent Polish notations using Stack?

12. (a) What is Circular Queue? Write a C++ Program to perform the Operations of Circular Queues.

**OR**

- (b) Write a C++ Program to represent Doubly Linked List and its Operations.

13. (a) What is Binary Tree? How to represent it. Explain Binary Tree Traversal.

**OR**

- (b) Write a C++ Program to show Quick Sort. Trace it by taking sample numbers.

14. (a) What is Hashing? Describe the Key Terms and Issues in Hashing.

**OR**

- (b) Write Kruskal's Algorithm. Explain by taking example.

\*\*\*\*\*

Faculty of Science

B.Sc. (Data Science) II-Year CBCS III-Semester Regular Examinations Jan– 2024

Paper: Data Engineering with Python

Time: 3 Hours

Max. Marks: 70

SECTION – A

I. Answer any SIX of the following questions.

(6 x 5 = 30 Marks)

1. Explain the importance of Data Analysis.
2. Write about Python os and os.path Modules.
3. What are Named Groups in Python Regular Expressions?
4. What is the glob module? Discuss the uses of it.
5. How to create Collection and inserting documents in MongoDB?
6. What is Broadcasting in Arrays? Explain.
7. How are Data Frames related to Series? Explain.
8. What is PyPlot? What are the methods available in it to draw charts?
9. Define XML in Python. Write the Syntax of it. Explain with example.
10. How to process HTML files in Python?

SECTION B

II. Answer the following questions.

(4 x 10 = 40 Marks)

11.(a) Describe the Report Structure in Data Science.

**OR**

(b) Explain reading and writing operations on Binary Files with suitable examples in Python.

12.(a) Explain processing Texts in Natural Languages.

**OR**

(b) Discuss in detail about the functions available in Python to implement Regular Expression.

13. (a) Discuss in detail about the Stacking and Splitting of n-arrays.

**OR**

(b) How to use MySQL Database? Explain with examples.

14.(a) Write a Python program with output for Reshaping Data.

**OR**

(b) Discuss the process of Plotting with Pandas.

\*\*\*\*\*