

Time: 3 Hours

Max Marks: 70

Section-A

I. Answer any FIVE of the following questions

(5x4=20 Marks)

1. Match the scientific terms with their meanings
a) Sprain: cause to be immobile b) Bluetooth : Twist suddenly so as to wrench
c) Paralyse : wireless connection d) WIFI: Wireless signal
2. Mark the words which are stressed in the following sentences
a) The dog jumped into the river. b) sonali is my cousin.
c) Seetha is making a dress for geetha. d) The glass needs to be wiped out.
3. Correct the errors for the following
a) am having two pens and one pencil. b) The water is much better than the tea.
c) My friend took my sister and I out to dinner.
d) The mothers words had a great effect on me.
4. Write a note on Inter personal skills?
5. Punctuate the following
a) No you just cannot stay out so late . b) Its a lovely colour
c) How sad he looked d) Oh my god
6. Correct and write misspelt words for the following .
a) experiense b) grammer c) acquir d) pleasnat
7. Define Assimilation with Example?
8. Expand the proverb Good Things Come to those who wait .

Section-B

II. Answer the following questions

(5x10=50 Marks)

9.(a) i) Annotate the following

At first you will be inclined to laugh at this man ,and to think that he is not smart in his ideas .

ii) What is the theme of the poem I am not that woman ?

5Marks

5Marks

(OR)

(b) i) Read the following passage and answer the questions .

5Marks

Sagar Bhogaraju ,a scientist whose roots are in Nizamabad .and Satya Nadella ,the CEO of Microsoft Corporation ,who had his schooling in Hyderabad ,are just couple of examples of achievers from the Telangana diaspora .People of Telangana have spread out and settled in various countries across the world .In the USA ,they have formed associations such as TATA (Telangana American Telugu associations)and ATA (American Telugu Association)These and other such associations strongly supported the Telangana Movement .They devote a lot of time,energy and money for development of Telangana .

1) Who is Satya Nadella?

2) Provide the full form of TATA ?

3) Define diaspora?

4) Write full form of ATA ?

5) What is meant by Devote?

ii) How are the sins of youth inherent in its virtues ?

5Marks

10 (a) i) Annotate the following

I am the woman

Whom you bought and sold

5Marks

ii. Rewrite the following sentences using the words in the brackets.

5Marks

1) You'd better submit the report on Friday. (were)

2) If you do not work, you will not be paid. (unless)

3) She was not careful, so she lost her purse. (had been)

4) We cannot make chicken curry for dinner the guest is a vegetarian (were)

5) If there is medical emergency, call the doctor immediately. (in case)

(OR)**(b) i)** What was Narayan Murthy's speech about ?**5Marks**

ii) Write a book review on your favourite book .

5Marks**11(a) i)** Read the following passage and answer the questions below .**5Marks**

A state symbol is a symbol of any entity that is considered as representative of the state's history, culture, goals and values. Such symbols help unite the people of the state using visual, verbal or iconic representations.

The newly formed state of Telangana has identified the following four icons as a state symbols: These icons reflect the culture and traditions of and three of them -Tangedu flowers ,Blue Jay and Jammi chetu -are associated with the popular festivals of Batukamma and Dasara .

1) Name the state flower of Telagana?

2) Name the state animal of Telangana ?

3) Name the state Tree of Telangana?

4) What is meant by Entity ?

5) Write Antonym for Popular?

ii) Write a curriculum vitae ,you are applying for the post of managing Editor to You win Monthly magazine ,Hyderabad .

5Marks**(OR)****(b) i)** Write a note on Presentation skills .**5Marks**

ii) Read the following passage and answer the questions below.

5Marks

Hyderabad is heaven for food lovers. Its cuisine is known as Deccani cuisine and is the legacy of the Qutb Shahi rule of the region. Modern Hyderabad cuisine is popular all over the world .It evolved during the reign of the Nizams, and beautifully combines the tastes Mughlai, Turkish ,Arabic, Telugu and Marathwada cuisines .The most famous of all Hyderabad dishes is, of course ,the delicious Hyderabad biryani. Nihari is a delicious and nourishing stew made of lamb trotter and tongue.

1) What is another name for Hyderabad cuisine?

2) What are the influences on Hyderabad cuisine?

3) What is the most famous Hyderabad dish?

4) Write the meaning of the word "Cuisine".

5) Write antonym for Heaven?

12.(a) i) Annotate the following**5Marks**

What is a value system ?Is it a protocol for behaviour that enhances the trust

ii) Write an essay on the environmental issues faced in your locality. **5Marks****(OR)****(b) i)** Write a Film Review of your choice?**5Marks**ii) Change the following simple sentences into compound sentences. **5Marks**

1) To my surprise ,Mini arrived in the morning with a pup in her arms.

2) It was not dark even at seven in the evening.

3) Being exhausted after the climb, we rested on the hilltop for a while.

4) Seema called her uncle to ask him for an address.

5) Being exhausted after the climb ,we rested on the hilltop for a while.

13.(a) i) Write a conversation for the following situation.**5Marks**

Your class has to organize college play on the occasion of Independence day.

Hold a meeting to choose a play and discuss the allocation of specific roles (actors, directors ,set designs, etc.,)

ii) Explain the proverb Good things come to those who wait.

5Marks**(OR)****(b) i)** Define situational vocabulary and write an example?**5Marks**

ii) Write acronyms for the following words

5Marks

1) NASA 2) WWW 3) UNO 4) CBI 5) BBC

Faculty of Commerce/Science/Business Management
B.Com/BBA/B.Sc III-Year, CBCS-V Semester
Regular Examinations Nov/Dec-2024
PAPER: HINDI-V

Time: 3 Hours

Max Marks: 70

भाग —अ

I. निम्नलिखित प्रश्नों में से चार का जवाब दीजिए

4X5=20

1. भाषा क्या है, समझाते हुए भाषा की कोई एक परिभाषा लिखिए।
2. राष्ट्र भाषा पर अपने विचार व्यक्त कीजिए।
3. नाटक का अर्थ एवं परिभाषा समझाइए?
4. नाटक और एकांकी में फर्क अपने शब्दों में लिखिए।
5. मुद्रण क्या है, लिखिए।
6. लोक कलाओं में कठपुतली और रंगमंच पर प्रकाश डालिए।

भाग —आ

II. निम्न लिखित प्रश्नों में से पांच का जवाब दीजिए

5X10=50

7. **अ)** हिन्दी को राज भाषा और राष्ट्र भाषा एवं संपर्क भाषा का दर्जा क्यों दिया गया, समझाइए।
 (या)
आ) राष्ट्र भाषा हिन्दी पर अपने विचार व्यक्त कीजिए।
8. **अ)** हिन्दी उपन्यास के विकास यात्रा पर प्रकाश डालिए।
 (या)
आ) हिन्दी कहानी के क्षेत्र में प्रेमचन्द जी के स्थान पर प्रकाश डालिए।
9. **अ)** जनसंचार का अर्थ, परिभाषा एवं स्वरूप पर प्रकाश डालिए।
 (या)
आ) जनसंचार की विशेषताओं पर विस्तार से विचार व्यक्त कीजिए।
10. **अ)** हिन्दी के विविध रूपों को स्पष्ट कीजिए।
 (या)
आ) हिन्दी निबन्ध के उद्भव और विकास पर प्रकाश डालिए।
11. **अ)** जनसंचार के श्रव्य माध्यमों पर प्रकाश डालिए।
 (या)
आ) भाषा क्या है और मानव के विकास के लिए उसकी आवश्यकता को समझाइए।

301LS/R

Faculty of Commerce/Science/Business Management
B.Com/BBA/B.Sc III-Year, CBCS-V Semester Regular
Examinations Nov/Dec-2024
PAPER: SANSKRIT-V

Time: 3 Hours

Max Marks: 70

PART-I

4X5=20

- 1) ऽङ्गादेव्याः परिचयं लिखत ।
- 2) ससन्दर्भं व्याख्यात - सत्यं वद, धर्मं चर ।
- 3) पाणिनिशास्त्रकारस्य परिचयं लिखत ।
- 4) दीपक - अलंकारस्य लभ्यलक्षणसमन्वयं कुरुत ।
- 5) ससन्दर्भं व्याख्यात - अहमस्मीत्यवकीत् मातरिश्वा वा.
अहमस्मीति ।
- 6) भारविकावेः परिचयं लिखत ।

PART-II

10X5=50

- 1) द्वयोः श्लोकयोः प्रतिपदार्थं तात्पर्यं च लिखत ।
अ) गुरुपदेशः किल कथ्यते बुधैरकार्कशं किंचन रत्नकुण्डलम् ।
अमेयकं नूतनमंजनं सतामजातगात्रक्षयमद्भुतं तपः ॥
आ) युवानमज्ञातमयागमक्रमं स्वतन्त्रमैश्वर्यमदोद्धतं नृपम् ।
विपल्लवेन व्यसनानुवन्धजा क्षिणोति चन्द्रं भणदेव तामसी ॥
ब) दितानि कुर्वन्नपि नानुरक्तये जनस्य जल्पन् परुषं रुषा मृपः ।
पयांसि वर्षन्नपि किं न भीषणः कठोरविस्मृज्युगजितो धनः ॥
घ) अब्रैत्रिरैश्वर्यशरीरयश्मभिर्दत्तासिलांगैर्वस्मैरुपद्रुताः ।
तमः पराभूतनिजौजसो नृपाः प्रयान्ति क्षालाद् द्विषतामुपेक्ष्यताम् ॥

8) हर्षः अर्जुनस्यैव नृपतिरिति ज्ञेयम् ।
 अ) अयम् । ब) अपरमुक्तप्रमाणम् । इ) दृष्टान्तः
 ई) अनन्वयः ।

9) गुरोः शिष्यन् निमनुशास्ति ?

अथवा

10) केनेपनिषद् वर्णितानुसारं ब्रह्मशास्त्रेर्मरीयसी इति
 पाठ्योक्तस्य सारं लिखत ।

11) दृष्टोः परिचयं लिखत ।

अ) कौटिल्यः आ) श्रीहर्षः इ) माघः ई) ~~अर~~ ~~अर~~

ई) भरतमुनिः ।

Faculty of Commerce/Science/Business Management
B.Com/BBA/B.Sc III-Year, CBCS-V Semester
Regular Examinations Nov/Dec-2024
PAPER: TELUGU-V

Time: 3 Hours

Max Marks: 70

విభాగము - ఎ

I. ఈ క్రింది ప్రశ్నలలో ఏదేని నాలుగు ప్రశ్నలకు జవాబులు రాయండి. $4 \times 5 = 20$.

1. పద్యం
2. వచన కవిత
3. వ్యాసం లక్షణాలు
4. వ్యాసం కవి సమయములు
5. ముందుమాట
6. పుస్తక సమీక్ష

విభాగము-బి

II. ఈ క్రింది వ్యాసరూప ప్రశ్నలకు సమాధానాలు రాయండి. $5 \times 10 = 50$

7 a). కవిత ప్రక్రియలోని పద్యాన్ని నిర్వచించి దాని లక్షణాలను తెలపండి.

లేదా

b). మినీ కవితను నిర్వచించి దాని లక్షణాలను తెలపండి

8.a) తెలుగు వ్యాసాన్ని నిర్వచించి దాని అర్థం చరిత్రలో వివరించండి

లేదా

b). తెలుగు వ్యాసంలో వస్తు వైవిధ్యమును తెలిపి వస్తువు రకాలను వివరించండి.

9.a) వచన సాహిత్యంలోని అధ్యయన పద్ధతులను సమగ్రంగా వివరించండి.

లేదా

b) వచన సాహిత్యంలో అధ్యయన సాహిత్య ప్రయోజన రకాలను తెలపండి.

10.a) తెలుగు వ్యాస పరిణామ క్రమ వివిధ దశలను వివరించండి.

లేదా

b). తెలుగు వ్యాసం లక్షణాలను వివరించండి.

11a). లఘు కవిత రూపంలోని నాణీలను నిర్వచించి దాని లక్షణాలను తెలపండి.

లేదా

b). కవితా ప్రక్రియలలో పాట రచనలోని వస్తువు ప్రాధాన్యతను వివరించండి.

Faculty of Commerce/Science/Business Management
Second Language - Arabic
B.A./B.Com./B.Sc./B.B.A. III - Year, CBCS – V Semester Regular
Examinations – Nov/Dec - 2024
PAPER: Modern Prose, Poetry & History of Arabic Literature
Time: 3 hours
Max Marks: 70

Section - A (4×5=20)

Answer any 4 Questions, Each Question Carries 5 Marks.

1. Translate the paragraph with reference to the context:

(١) ترجم الفقرة مع الإشارة الى نصها:
وقف آزاد حياته كلها لخدمة الوطن وأهله، وإن إيمانه بالوطنية كان قويا، وكان آزاد على يقين أن
تحرير الهند لا يمكن دون تشكيل قومية مشتركة مكونة من معتقدي كل الديانات.

2. Translate the Verses:

(٢) ترجم الأبيات:
الناس من جهة التمثيل أعداء أبوهم آدم وأهمهم حواء
فان يكن لهم في أصلهم شرف يفاخرون به فالطين والماء

3. Answer the following questions:

(٣) أجب عن الأسئلة:
(a) ما معنى المساواة ؟ (b) أين ولد أبو الكلام آزاد ؟

4. Convert any FIVE of the Following Singular words into Plural:

(٤) ات بخمسة جموع للكلمات الآتية:
مذهب - علم - كتاب - نكي - نور - مصباح - سماء - لغة .

5. Write any FIVE meanings from the following words:

(٥) اكتب خمسة معاني الكلمات التالية؟
أدلاء - المساواة - دين - بطل - سيد - شجر - حرية - مصباح .

6. Write a short note on any ONE of the following Writers:

(٦) اكتب عن أحد الكاتبين بالإجمال:
(a) الحريري (b) بدیع الزمان الهمداني

SECTION - B (5×10=50)

Answer all Questions, Each Question carries 10 Marks

7. (A) Write the Summary of the lesson " المساواة الإنسانية " :

(٧) (١) اكتب خلاصة الدرس " المساواة الإنسانية " :

(OR)

(B) Explain the summary of "Batlul Hur":

(ب) بين خلاصة "بطل الحر".

8. (A) Write any FIVE opposite words from the following:

٨) أكتب خمسة أضداد من الكلمات الآتية :
شريف - نور - الأسود - جاهل - طاعة - غني - الحاكم - علم

(OR)

(B) Answer any FIVE of the following questions:

أجب عن خمسة أسئلة الآتية:
١. هل آدم أبو الناس وحواء أمهم ؟ ٢. هل الكتاب ذكي أمين ؟ ٣. لمن الفخر ؟
٤. من هو بطل الحرية ؟ ٥. ما هي مصابيح النور ؟ ٦. أي شيء كنز ثمين ؟ ٧. ما هو دليل العمل ؟

9. (A) Write the Summary of the Lesson " كتابي " :

(9) أكتب خلاصة الدرس "كتابي".

(OR)

(B) Full up the blanks with the suitable words given below:

أملأ الفراغات الآتية بكلمة مناسبة:
١. _____ لأهل العلم أعداء
٢. ما الفخر إلا _____ انهم
٣. ففز بعلم تعش _____
٤. الناس _____ وأهل العلم أحياء
٥. على الهدى لمن _____ أدلاء
(لأهل العلم - به ابدا - موتي - الناس - استهدي)

10. (A) What do you know about Writer " الجاحظ " ? write in detail:

(10) (أ) ماذا تعرف عن الكاتب " الجاحظ " ؟ أكتب عنه بالتفصيل .

(OR)

(B) Write in detail on the development of prose in Abbasi Period:

(ب) أكتب مفصلاً عن تطور "النثر في العصر العباسي".

11. (A) Write a note on " ابن المقفع " :

(11) (أ) أكتب حول الكاتب " ابن المقفع " ؟

(OR)

(B) Write in detail about the "Arabic Literature in Abbasi Period":

(ب) أكتب مفصلاً عن "الأدب العربي في العصر العباسي".

Faculty of Commerce/Science/Business Management
B.Com/BBA/B.Sc III-Year, CBCS-V Semester
Regular Examinations Nov/Dec-2024
PAPER: URDU-V

Time: 3 Hours

Max Marks: 70

SECTION 'A'

$$4 \times 5 = 20$$

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

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

- (1) ذرائع ابلاغ کی تعریف بیان کیجئے۔
- (2) انٹرنیٹ کا آغاز کس سن میں عمل میں آیا۔
- (3) برقی صحافت سے کیا مراد ہے۔
- (4) سوشل میڈیا سے کیا مراد ہے۔
- (5) پرنٹ میڈیا کی اہمیت پر نوٹ لکھئے۔
- (6) ہندوستان میں ریڈیو کا آغاز کب عمل میں آیا۔

SECTION 'B'

$$5 \times 10 = 50$$

II. تمام سوالات کے جوابات مطلوب ہیں۔

- (7) (a) مولوی محمد باقر کی صحافتی خدمات کو اجاگر کیجئے۔ یا
 (b) ماس میڈیا میں ریڈیو کی اہمیت کو واضح کیجئے۔
- (8) (a) اخبار میں ادارہ نگاری کی اہمیت و افادیت پر روشنی ڈالئے۔ یا
 (b) لالہ لاجپت رائے کے بارے آپ کیا جانتے ہیں۔
- (9) (a) کالم نگاری پر مفصل نوٹ لکھئے۔ یا
 (b) اخبار میں نامہ نگاری اہمیت پر تفصیلی روشنی ڈالیے۔
- (10) (a) فیچر نگاری کی اہمیت کو واضح کیجئے۔ یا
 (b) ہندوستان میں اردو صحافت کی اہمیت بیان کیجئے۔
- (11) (a) مولانا ابوالکلام آزاد کے صحافتی کارناموں کو اجاگر کیجئے۔ یا
 (b) حسرت موہانی کی صحافتی زندگی پر روشنی ڈالئے۔

Faculty of Science
B.Sc III-Year, CBCS-V Semester Regular Examinations Nov/Dec-2024
PAPER: BASIC ELECTRONICS (GE)

Time: 3 Hours

Max Marks: 70

Section-A

I. Answer any Six of the following questions

(6x5=30 Marks)

1. Define ohm's law and its limitations.
2. Derive the expression for Energy stored in capacitor.
3. What are Active elements and Passive Elements.
4. What is Admittance and Impedance of the circuit.
5. Write down the difference's b/w Intrinsic Semiconductor and Extrinsic Semiconductor.
6. Write about Varactor diode.
7. What is Transistor? Explain the regions in Transistor.
8. Mention the difference b/w PNP and NPN Transistor.
9. Explain Zener diode as Voltage Regulator.
10. what is Early effect.

Section-B

II. Answer all the following questions

(4x10=40 Marks)

11.a. Explain in detail about colour coding of resistor.

OR

b. Explain the types of capacitor and application of capacitor.

12.a. Explain Kirchhoff's voltage and current law with an example.

OR

b. Explain lumped system and distributed system

13.a. Define PN diode? Explain PN junction diode with its V-I characteristics.

OR

b. What is Tunneling Phenomenon? Write down the V-I characteristics of Tunneling diode.

14.a. Explain NPN and PNP transistor with its operations.

OR

b. Explain CE configuration with input and output characteristics.

Faculty of Science

B.Sc III-Year, CBCS-V Semester Regular Examinations Nov/Dec-2024

PAPER: LINEAR ALGEBRA

Time: 3 Hours

Max Marks: 70

Section-A

I. Answer any Six of the following questions (6x5=30 Marks)

- Let H be set of all vectors of the form $(a-3b, b-a, a, 6)$ where a, b are scalars then show that H is a sub space of $\mathbb{R}^4$.
- Prove that intersection of any two sub-spaces of a vector space is again a sub-space.
- Find the eigen values and eigen vectors of $A = \begin{bmatrix} 1 & 6 \\ 5 & 2 \end{bmatrix}$
- If A is a matrix of order 7×5 then find $\dim \text{Nul } A$, $\dim \text{row } A$ and rank of A^T with rank '2'
- Diagonalize the matrix $A = \begin{bmatrix} 2 & -1 \\ 1 & 4 \end{bmatrix}$
- If $P = \begin{bmatrix} 5 & 7 \\ 2 & 3 \end{bmatrix}$, $D = \begin{bmatrix} 2 & 0 \\ 0 & 1 \end{bmatrix}$ then compute A^4 where $PDP^{-1} = A$
- Define inner product of two vectors if $\vec{U} = \begin{bmatrix} 2 \\ -5 \\ 1 \end{bmatrix}$, $\vec{V} = \begin{bmatrix} -7 \\ -4 \\ 6 \end{bmatrix}$ then find $\vec{U} \cdot \vec{V}$, $\|\vec{U} + \vec{V}\|^2$
- Prove that $\|\vec{u} + \vec{v}\|^2 + \|\vec{u} - \vec{v}\|^2 = 2[\|\vec{u}\|^2 + \|\vec{v}\|^2]$ where $\vec{u}, \vec{v} \in \mathbb{R}^n$
- Define null space, let $A = \begin{bmatrix} -2 & 4 \\ -1 & 2 \end{bmatrix}$ and $\vec{w} = \begin{bmatrix} 2 \\ 1 \end{bmatrix}$. Determine if $\vec{w}$ is in $\text{col } A$ and $\vec{w}$ is in $\text{nul } A$?
- Find the orthogonal projection of $\vec{y}$ onto it where $\vec{y} = \begin{bmatrix} 7 \\ 6 \end{bmatrix}$; $\vec{u} = \begin{bmatrix} 4 \\ 2 \end{bmatrix}$

Section-B

II. Answer all the following questions (4x10=40 Marks)

11. a) State and prove spanning set Theorem

(OR)

- b) If
- $A = \begin{bmatrix} 1 & -4 & 9 & -7 \\ -1 & 2 & -4 & 1 \\ 5 & -6 & 10 & 7 \end{bmatrix}$
- then find basis & dim for
- $\text{Col } A$
- ,
- $\text{nul } A$
- .

12. a) State and prove rank Theorem

(OR)

- b) Find the eigen values and eigen vectors of
- $A = \begin{bmatrix} 4 & 0 & 1 \\ -2 & 1 & 0 \\ -2 & 0 & 1 \end{bmatrix}$

13. a) Diagonalize the matrix
- $A = \begin{bmatrix} 1 & 3 & 3 \\ -3 & -5 & -3 \\ 3 & 3 & 1 \end{bmatrix}$

(OR)

- b) Let
- $T: P_2 \longrightarrow P_3$
- be a mapping that map from
- $P(t)$
- into
- $(t+3)P(t)$
- then

- Find the image of $P(t) = 3 - 2t + t^2$
- Show that T is a Linear Transformation.
- Find the matrix for T relative to the basic $\{1, t, t^2\}$ and $\{1, t, t^2, t^3\}$

14. a) i) Define orthogonal set of vectors

- ii) Show that the set
- $\{\vec{V}_1, \vec{V}_2, \vec{V}_3\}$
- is an orthogonal set of
- $\mathbb{R}^3$
- . Where
- $\vec{V}_1 = \begin{bmatrix} 1 \\ 0 \\ 1 \end{bmatrix}$
- ,
- $\vec{V}_2 = \begin{bmatrix} -1 \\ 4 \\ 1 \end{bmatrix}$
- ,
- $\vec{V}_3 = \begin{bmatrix} 2 \\ 1 \\ 2 \end{bmatrix}$
- .

Also express $\vec{x}$ is a linear combination of vectors. Where $\vec{x} = \begin{bmatrix} 8 \\ -4 \\ 3 \end{bmatrix}$

(OR)

- b) i) Define orthonormal set of vectors.

- ii) Apply the gram Schmidt process to the vectors
- $\beta_1 = (1 \ 0 \ 1)$
- ,
- $\beta_2 = (1 \ 0 \ -1)$
- ,
- $\beta_3 = (0 \ 3 \ 4)$
- to obtain orthonormal basis for
- $V_3(\mathbb{R})$

Faculty of Science
B.Sc III-Year, CBCS-V Semester Regular Examinations Nov/Dec-2024
PAPER: Modern Physics

Time: 3 Hours**Max Marks: 70****Section-A****I. Answer any SIX of the following questions****(6x5=30 Marks)**

1. List out the drawbacks of Bhor's atomic model
2. Explain the L-S coupling and J-J coupling schemes
3. State and Explain the Heisenberg-Uncertainty principle
4. State the properties of wave function
5. What are the magic numbers and write down their significance
6. Write a short note on α -particle range
7. Discuss the structure of NaCl
8. X-rays of wavelength $1.54 \text{ \AA}$ are diffracted by a crystal with the first maximum occurring at 30° What is the separation between the lattice planes.
9. Write a short note on β spectrum
10. Explain Born-Haber cycle

Section-B**II. Answer the following questions****(4x10=40 Marks)**

- 11.(a)** What is Zeeman Effect? Describe the experimental arrangement to study the Zeeman effect. Deduce an expression for Zeeman shift.

OR

- (b)** What is Raman effect. Describe the experimental setup used in study of Raman effect in liquids.

- 12.(a)** What are matter waves? Explain Davisson - Germer experiment to demonstrate the wave character of electron.

OR

- (b)** Deduce Schrodinger (i) Time independent and (ii) Time dependent equations for matter waves.

- 13.(a)** Discuss in detail the liquid drop model of an atomic nucleus. Obtain semi-empirical mass formula of the nucleus.

OR

- (b)** What are nuclear detectors ? With a neat diagram explain the principle, construction and working of GM counter.

- 14.(a)** What is Bragg's law? Describe the Laue method for the determination of crystal structure.

OR

- (b)** Derive the expression for Madelung constant for NaCl crystal.

Faculty of Science
B.Sc III-Year, CBCS-V Semester Regular Examinations Nov/Dec-2024
PAPER: PROGRAMMING IN JAVA

Time: 3 Hours

Max Marks: 70

Section-A

I. Answer any Six of the following questions (6x5=30 Marks)

1. What is JVM?
2. How to declare class and objects in JAVA?
3. How to declare and call a method in JAVA?
4. What are abstract classes?
5. What is exception?
6. What is thread?
7. What is an Applet?
8. What is AWT?
9. What are different features of JAVA?
10. What is Package in JAVA?

Section-B

II. Answer all the following questions (4x10=40 Marks)

11 (a). Explain different Operators supported by JAVA with example?

OR

(b). Explain Conditional statements in JAVA?

12 (a). What is Constructor? Explain type of constructor?

OR

(b). What is Inheritance? Explain types of Inheritance?

13(a). Explain Thread life cycle?

OR

(b). Explain File Stream Class and types?

14(a). Explain Applet life Cycle and write a program on an applet?

OR

(b). Explain AWT Components?

Faculty of Science
B.Sc III-Year, CBCS-V Semester Regular Examinations Nov/Dec-2024
PAPER: Analytical Statistics-I

Time: 3 Hours

Max Marks: 70

Section-A

I. Answer any SIX of the following questions (6x5=30 Marks)

1. Define the following
i) Probable sampling. ii) Population
2. Explain about Mixed sampling.
3. Define simple random sampling without replacement.
4. Explain Applications of stratified random sampling.
5. Explain Applications of Mean chart
6. State the Process control.
7. What are the types of sampling methods.
8. Write control limits for c chart.
9. Explain Gauss Markov theorem in Analysis of variance.
10. Write advantages of R.B.D.

Section-B

II. Answer the following questions (4x10=40 Marks)

11.(a) Explain briefly about Types of Sampling Methods.

OR

(b) Find the sample variance in Simple Random Sampling With Replacement (S.R.S.WR).

12.(a) Write advantages and disadvantages of Stratified Random Sampling.

OR

(b) Find the sample mean of Stratified Random Sampling.

13.(a) What is mean by Statistical Quality Control. Explain it's uses in Industry.

OR

(b) Find the control limits for c- chart and State the process in control.

14.(a) Explain Two way classification in ANOVA.

OR

(b) Explain Statistical Layout of L.S.D .

Faculty of Science
B.Sc III-Year, CBCS-V Semester Regular Examinations Nov/Dec-2024
PAPER: Applied Statistics-I

Time: 3 Hours

Max Marks: 70

Section-A

I. Answer any SIX of the following questions (6x5=30 Marks)

1. Define sampling and statistic.
2. Define Simple random sampling with replacement.
3. State the methods of sampling.
4. Define cluster sampling.
5. Define Time series with suitable example.
6. Define Seasonal indices in Time series.
7. Define Quality control.
8. Define Accepting sampling plan.
9. Explain census method .
10. Write advantages of stratified random sampling.

Section-B

II. Answer the following questions (4x10=40 Marks)

11.(a) Distinguish between census and sample survey for methods of collecting Mention merits and demerits of census method.

OR

(b) Find Estimates of mean of SRSWR & SRSWOR.

12.(a) State the comparison variances between Simple random sampling and stratified & Neyman allocation.

OR

(b) What is mean by simple random sampling. Distinguish between Stratified random sampling and simple random Sampling..

13.(a) What are the components of Time series. Explain briefly.

OR

(b) Explain the methods of Ratio to moving average method.

14.(a) What is mean by Statistical quality control ,explain control chart for Range..

OR

(b) Explain about single and double sampling plan.

Faculty of Science
B.Sc(Data Science) III-Year, CBCS-V Semester Regular Examinations
Nov/Dec-2024
PAPER: NO SQL DATABASES

Time: 3 Hours

Max Marks: 70

Section-A

I. Answer any Six of the following questions (6x5=30 Marks)

- 1) Explain the concept of schema-less databases in NoSQL
- 2) What is a column-family store in NoSQL? Provide an example of a database that uses this.
- 3) Write about sharding in the context of NoSQL databases.
- 4) Explain the concept of a quorum in distributed databases.
- 5) What is impedance mismatch? Give an example.
- 6) List three main features of Document Databases.
- 7) Provide two suitable use cases for Graph Databases.
- 8) List three main features of Graph Databases.
- 9) What are version stamps, and how are they used in managing transactions in distributed databases?
- 10) Give two examples of suitable use cases for Key-Value Databases

Section-B

II. Answer all the following questions (4x10=40 Marks)

- 11) a) What is NoSQL? Compare SQL and NoSQL Databases, Types of NoSQL Databases.
OR
b) What are the advantages and limitations of using NoSQL databases for real-time applications?
Discuss how graph databases support real-time data processing and analytics.
- 12) a) Describe about master-slave replication in detail.
OR
b) Explain the Map-Reduce concept with an example.
- 13) a) Explain what a Key-Value Store is and discuss its main features.
OR
b) Write about document databases in detail.
- 14) a) Compare Column-Family Stores and Graph Databases.
OR
b) Describe the architecture of a Column-Family Store and explain how it organizes and retrieves data.
