

Faculty of Commerce, Sciences & Business Management
B.Com./B.Sc./BBA I-Year, CBCS-I Semester Regular Examinations Jan-2024
PAPER: Basic Computer Skills

Time: 2 Hours

Max Marks:40

Section-A

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

1. Computer memory
2. Functions of Operating Systems
3. URL.
4. e-mail

Section-B

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

5. (a) Explain the components of a Computer and its applications.

(OR)

(b) Write about Word Processing features.

6. (a) What are the applications of PPT? write about preparation and presentation of Slides.

(OR)

(b) Define Network. Write about the various types of Networks.

Section-A

I. Answer any Five from the following.

(5x4=20 Marks)

1. Write down the meaning and two words formed using each of the given root.

Root	meaning	English words
Eg.audi	hear	Audio,audience
chrono		
fact		
Bio		
homo		

2. Fill in the blanks with the suitable pronouns.

- a) If anyone asks,tellI will be back tomorrow.
 b) Rohan wants to do it.....
 c) Fatima said thatand her sister work together.
 d) The camera I wanted for so long is finally.....?

3. Write the noun forms of the words below using '-tion'and '-sion'.

- a) Frustrate e) Apprehend
 b) Educate f) Relate
 c) Impress g) Expand
 d) Persuade h) Invent

4. Fill in the blanks with the correct auxiliary verbs from the given choices.

- a) Whereyour friends going yesterday?(are,was,were,did)
 b) That caralways been my favourite.(was,has,is,have)
 c) Whomyou meet this afternoon?(have,are,were,did)
 d) My teamyet lost a match.(didn't,hasn't,has,won't)

5. Define Noun?Write types of nouns with examples?

6. Pick and write the correct spelling from the three options given below.

- a. comitioner commissioner commishioner
 b. nefew nephew nephw
 c. curiosity quriopsity curiosity
 d. humuor humour huemer

7. Fill in the blanks by modifying the words in the brackets as instructed.

- a. He wants tome on Facebook.(prefix+friend).
 b. Sheher strength.(prefix+estimate)
 c. our team won the hockey(champion+suffix)
 d. It is.....to kill endangered animals.(prefix+legal)

8. Write a short piece of dialogue for the following situation.
Two friends meet by a chance after many years.They used to be in the same sports club when they were children.

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

- 9.(a) i) Annotate the following (5M)

If you can meet with Triumph and disaster
And treat those two imposters just the same.

(5M)

- ii) 'The Law of the Jungle. Do you want the pack to tear you in pieces? The kill is mine. What is Hartley talking about? In What context does he say this? Elaborate.

(OR)

- (b) i) Read the following passage and answer the questions given below (5M)

Bathukamma is a colourful and vibrant festival of the Telangana region and a symbol of Telangana's cultural identity and integrity .It is celebrated during the latter half of the monsoon season, before the onset of winter .The word 'Bathukamma 'refers to a beautiful floral arrangement .The flowers are carefully arranged row after row on a brass plate in a circular rows and in alternate colours. Traditionally, the women of the region prepare Bathukammas using various flowers including gunuka, tangedi, banti and chemanti. The festival lasts for seven days and ends with the grand 'saddula Bathukamma' which falls two days before Dussehra.

- 1) When is the festival of Bathukamma celebrated? How long does it last?
- 2) Describe the bathukamma?
- 3) Which flowers are used to prepare the arrangement?
- 4) Describe the activities that mark the last day of festival.
- 5) What is the significance of the festival of Bathukamma?

- ii) According to the poem, what are some of the challenges that a person will have to face in life? (5M)

- 10.(a) i) Annotate the following (5M)

If you can meet with Triumph and Disaster
And treat those two imposters just the same;

- ii) Identify the diphthong sounds of the words given below, write their phonemic symbols (5M)

a) toy b) phone c) say d) count e) noise
f) hear g) hair h) wait i) crowd j) destroy

(OR)

- (b) i) Annotate the following (5M)

'My dear child ,'said the police inspector, "he is a thief."

- ii) Read the following passage and answer the questions given below. (5M)

The Gnana Saraswati temple in Basara is an important Hindi temple of goddess Saraswathi in Telangana. Basara is located around 35km from Hyderabad, the state capital, on the banks of the Godavari. It is one of the most famous Saraswathi temples in south India.

Legend has it that Vyasya, a great saint and the poet who penned the Mahabharath, was in search of a serene place to rest and offer penance after the Kurukshethra war.

- a)Where is the Gnana Saraswati temple located?
- b)Why did Vyasa come to the banks of the Godavari?
- c)Narrate the legend behind the origins of the Temple.
- d)Write synonym for Penance?
- e)Write antonym for Famous?

11. (a)i) Annotate the following (5M)

No you are mistaken,my dear Natalia Stepanova,they belong to me.

ii)Read the following passage and answer the questions given below. (5M)

Government agencies are financed by taxes and levies imposed on citizens. They are therefore, answerable and accountable to the public for their acts of omission and commission.The public servants are supposed to act in a way that serves the maximum public interests at their minimum cost to the public exchequer.

- 1) Who will fund the government agencies?
- 2) Who are answerable to the public?
- 3) How does the public servants are supposed to act?
- 4) Write the meaning of the word "exchequer".
- 5) Write the opposite meaning of the word "omission".

(OR)

(b) i)Why does Lomov wish to marry Natalia? (5M)

ii)Rearrange jumbled sentences bellow into a logical sequence. (5M)

- a)The foundation city was laid in 1972
- b)As a result,the city suffered from horrendous traffic congestion
- c)It was going to be the first in South Asia.
- d)They piled in the Centre of the road.
- e)To ease traffic in the city, it was decided that an underground railway line would be built.
- f)Calcutta,unlike other cities,kept its trams.

12. (a)i) Develop the following hints into paragraph of your own.Write out the complete paragraphand give an appropriate title to it. (5M)

No shame in failure ---everyone fails ----from infant trying to stand to conqueror attempting conquest -----no mistake,no worthwhile achievement ---- attitude to failure important ----demoralised by failure, no gain ---bold resolution leads to victory ---be confident,optimistic.

- ii) Rewrite the following sentences in the tense suggested in brackets. (5M)
- a) Rosamma is keying in her paper for the conference. (change to present perfect tense)
 - b) They were working all day. (Change to simple present tense)
 - c) I lived in Kolkata for ten years. (Change to present perfect progressive tense)
 - d) I am playing a game of cards with my uncle. (change to past progressive tense)
 - e) Jessie met you at the clinic. (change to present progressive tense)

(OR)

- (b) i) Write a passage of about 100 to 200 words on Artificial intelligence in everyday life follow the steps suggested for writing coherent paragraphs.

(5M)

- ii) Identify the incorrect words and replace them with the correct form that uses either 'dis-' or 'un-'.

(5M)

- a) I am disable to connect to the Internet.
- b) He is ungrateful despite everything they do for him.
- c) Puran's arrival was unexpected.
- d) The new neighbours seemed to be disfriendly.
- e) The shopkeeper informed Latika that the book wasdisavailable.

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

An employee invites their boss to a team dinner .

- ii) Fill in the blanks with correct homophones from the options given below . (5M)

- a) I bought aof gloves. (pare, pair, pear)
- b) The king'sdid not last very long. (rein, rain, regin)
- c) If you park here, the police willyour car away (tow, toe)
- e) She wanted toher favourite outfit. (wear, ware)
- f) The lioness picked up theof her prey. (sent, scent, cent)

(OR)

- (b) i) Write about your dream career? write at least five points mentioning how you plan to transform that dream into reality.

(5M)

- ii) Write synonyms for the following words.? (5M)

- a) Knave
- b) beau
- c) debonair
- d) Repress
- e) Triumph

Faculty of Commerce, Sciences, Business Management
B.A/B.Com/B.Sc/BBA I-Year, CBCS-I Semester Examinations Dec- 2023
Subject: SECOND LANGUAGE HINDI

Time: 3 hours

Max Marks: 70

भाग-अ

- I. निम्नलिखित किन्हीं चार प्रश्नों के उत्तर दीजिए। 4×5=20
- 1) चरित्र निर्धारित करने के लिए किन-किन गुणों की आवश्यकता होती है ?
 - 2) राष्ट्र का स्वरूप किन-किन अंगों से बना है ?
 - 3) महादेवी वर्मा जी का कवि परिचय लिखिए ?
 - 4) प्रेमचंद जी का कवि परिचय लिखिए ?
 - 5) पंडित घासीराम का चरित्र चित्रण कीजिए ?
 - 6) वचन कितने प्रकार के हैं उदाहरण सहित समझाइये ?

भाग-आ (5×10=50)

- II. निम्नलिखित किन्हीं आठ प्रश्नों के उत्तर दीजिए।
- 1) निम्न में से किसी दो संदर्भ सहित व्याख्या कीजिए। 5×2=10
 अ) सहकारिता के क्षेत्र में संदर्भ सहित व्याख्या कीजिए।
 आ) भाभी मनों भावनाओं पर संदर्भ सहित व्याख्या कीजिए।
 इ) दुःखी की हालत पर प्रकाश डालते हुए संदर्भ सहित व्याख्या कीजिए।
 - 2) निम्न में से किन्हीं एक पाठ का सारांश लिखिए ? 1×10=10
 अ) बाजार दर्शन आ) सद्गति इ) राष्ट्र का स्वरूप
 - 3) निम्न में से किन्हीं पात्र का चरित्र चित्रण कीजिए। 5×1=5
 अ) मिस्टर शामनाथ आ) भाभी इ) पंडित परम सुख
 - 4) निम्नलिखित में से किन्हीं एक लेखक के बारे में लिखिए। 5×1=5
 अ) महादेवी वर्मा आ) जयशंकर प्रसाद इ) प्रेमचंद
 - 5) निम्नलिखित में से किन्हीं एक लेखक के बारे में लिखिए। 5×1=5
 अ) कारक कितने प्रकार के हैं उनके नाम लिखिए ?
 आ) काल कितने प्रकार के हैं उदाहरण सहित समझाइये ?
 इ) लिंग कितने प्रकार के हैं उदाहरण सहित समझाइये ?
 - 6) निम्न में से किसी पाँच का वाक्य शुद्ध कीजिए। 5×1=5
 अ) राम उससे कहा
 आ) हेमा ने रोटी खाया
 इ) गंगा बड़ा नदी है
 ई) सीता पुस्तक पढ़ी
 उ) राधा खाना बनायी
 - 7) निम्नलिखित वाक्यों का अंग्रेजी से हिंदी लिखिए। 5×1=5
 1. Order 2. Advice 3. Director 4. Passport 5. Translator
 - 8) निम्नलिखित वाक्यों का हिंदी से अंग्रेजी में लिखिए। 5×1=5
 1. अनुदान 2. समझौता 3. भत्ता 4. परिपत्र 5. अनुपस्थित

Code: 1005 /R

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

Time: 3 hours

Max Marks: 70

అ -భాగము

I. ఏవిని నాలుగు ప్రశ్నలకు క్లుప్తంగా సమాధానాలు రాయండి.

4×5=20

- 1) “ కడు వే డియో నీరు గలసిన వనియో ” సందర్భ సహిత వ్యాఖ్య రాయండి.
- 2) “ సమిధ నొక్కటి ఆహుతిద్దాను ” సందర్భ సహిత వ్యాఖ్య రాయండి.
- 3) ఈ క్రింది పదాలకు నానార్థాలు రాయండి.

1) కరము 2) భార్య 3) కేసరి 4) రాజు 5) సూర్యుడు

4) ఈ క్రింది పదాలకు పర్యాయపదాలు రాయండి.

1) పుత్రుడు 2) శరీరం 3) పక్షి 4) ధర 5) హస్తం

5) 'అద్దంకి గంగాధరుడు గురించి తెలపండి.

6) నందనవనం గురించి రాయండి.

ఆ -భాగము

II. ఈ క్రింది ప్రశ్నలకు వివరంగా సమాధానములు రాయండి

5×10=50

7. ఈ క్రింది పద్యానికి కవి పరిచయం సందర్భం ప్రతిపదార్థ తాత్పర్యం వ్యాకరణాంశాలు రాయండి.

విపరీత ప్రతిభాష లేమిటికీ నుర్వీనాథ! యీ పుత్రగా
త్ర పరిష్కంఠ సుఖంబు సేకొనుము ముక్తాహార కర్పూర సాం
ద్రవరాగ ప్రసరంబుఁ జందనముఁ జంద్రజ్యోత్స్న యుం బుత్తగా
త్ర పరిష్కంఠమునట్లు జీవులకు హృద్యంబే కడున్ శతమే

లేదా

నాళీకాపుడు గోరగించుట మున్ ప్రత్యూష కాలంబునన్
వాలా యంబుగ పుల్ల తామరస భవ్యం బైన శృంగారపుం
గేళా కూళి ని దీ ర్లమాడి యనురక్తిన్ దౌ తకాషా యుడై
ఫాలాది స్థలులందు నవ్య భసిత ప్రాగల్భ్య మే పారగాన్.

8) సంవరనుడి తపస్సును గురించి వ్రాయండి.

లేదా

'గంగిరెద్దు' కళావైభవాన్ని వివరించండి

9) రుద్రమదేవి 'గొప్పతనాన్ని గురించి వ్రాయండి.

లేదా

'మదన మంజరి' పాత్ర చిత్రణ

10) రుద్రమదేవికి గోనగన్నారెడ్డి సహకరించిన తీరును వివరించండి

లేదా

సోమదేవ వృత్తాంతాన్ని తెలపండి.

11) వాక్యము అనగానేమి? వాక్య నిర్మాణ రీతులను వివరించండి.

లేదా

ఈ క్రింది మూడు సందులను లక్ష్య లక్షణ సమన్వయం చేయండి.

1) గుణ సంధి 2) వృద్ధి సంధి 3) రుగాగమ సంధి

Time: 3 hours

Max Marks: 70

Section-A

I. Answer any Five from the following.

(5x4=20 Marks)

PART-A "अ" विभागः

- I सूचना :- चत्वारि प्रश्नाः समाधेयाः ।
1. श्लोकं भाषान्तरीकुरुत ।
'रामः सत्पुरुषो लोकं सत्यधर्मपरायणः ।
धर्मज्ञः सत्यसंबन्धश्च शीलवाननसूयकः ॥'
 2. क एष मामनुत्तरयन् मुमुर्षु स्मायति बाहिरः? इदं वाक्यं स्पष्टं व्याख्यात ।
 3. मनस्येकं ----- कुरात्मनाम् ॥ श्लोकमर्गं पूर्यत ।
 4. "सर्वस्य लोकस्य हिते निविष्टम्" - वाक्यमिदं स्पष्टं व्याख्यात ।
 5. एकं प्रसूयते माता द्वितीयं वाक्प्रसूयते ।
वाग्जातमाधिकं प्रोचुः सोदर्यदपि बन्धुवत् ॥ - श्लोकमर्गं भाषान्तरीकुरुत ।
 6. सन्धिं विद्यतयत ।
(1) गुर्वसि (2) दृश्या (3) षण्मुखः (4) रामस्तरति
(5) स्तुवन्त

Section-B

II. Answer all questions (Internal choice)

(5x10=50 Marks)

PART-B "आ" विभागः

- II सूचनाः- सर्वे प्रश्नाः समाधेयाः। सर्वे समाधानाः।
7. अ) अस्युत्तरस्यै दिशि देवतात्मा दिमान्तयो नाम नगाधिराजः ।
पूर्वापरौ तोयानिडी वगाद्य स्थितः पृथिव्या इव मानदण्डः ॥
(08)
 - अ) आमेखलं सञ्चरतां धनानां दृश्यामद्यः सानुगतां निवेप्य ।
उद्वेजिता वृष्टिभिराभ्यन्ते जृडापि यस्यातपवान्ति सिद्धाः ॥
 8. अ) दिवाकराद्गति यो गुहासु लीनं दिवाभीतमिवाब्धकारम् ।
मुदेऽपि नूनं शरणं प्रपन्ने महत्वमुच्चैः शिरसां सतीव ॥
(08)
 - अ) कपोलकण्ठः करिबिर्विनेतुं विद्यद्वितानां सर्लङ्गुमाणाम् ।
यत्र श्रुतशीरतया प्रसूतः सानुनि गन्धः सुरभीकरोति ॥
 9. अ) धर्मबद्धो दैवारिकः इति पाठ्यांशस्य सारं लिखत ।
(08)
 - अ) वानश्मकरयोः कर्मां पञ्चतन्त्रमनुसृत्य वर्णयत ।
 10. द्वौ शब्दौ सर्वासु विद्यकितेषु लिखत ।
① नदी ② फल
(08)
③ कवि ④ पितृ

11. पञ्चानां नामनिर्देशपूर्वकं सन्धत्त।

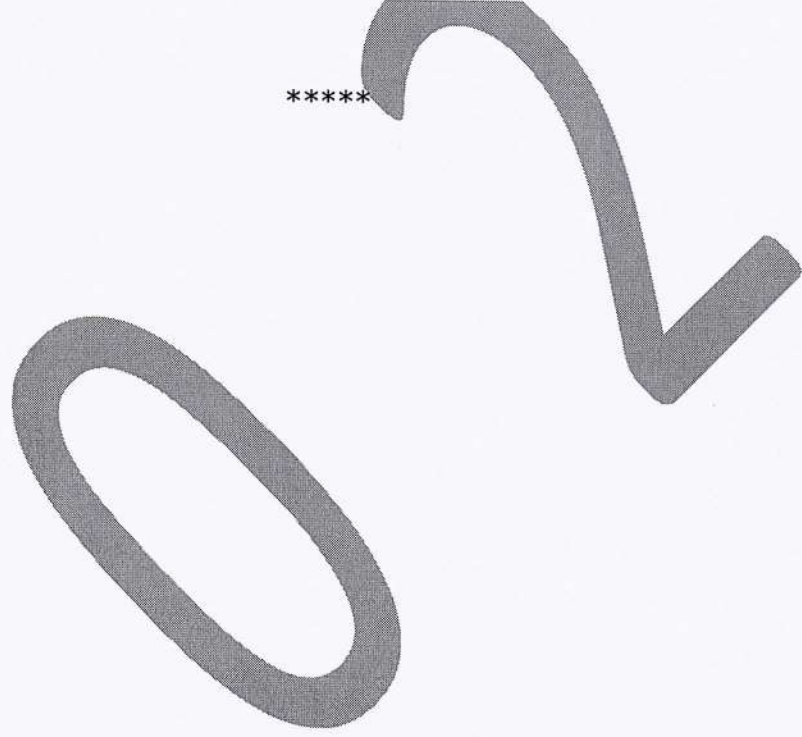
(1) हरि + इच्छा (2) नव + उदयः (3) इति + अप्र

(4) वाक् + ईशः (5) वाक् + मयम्

(08)

(6) तत् + लयः (7) कविः + आयाति (8) हरे + त्र

(9) तत् + टीका (10) हरिः + चरति



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Subject: Second Language Urdu

Max.Marks : 70

Time: 3 Hrs.

SECTION 'A'

4x5=20

- I مندرجہ ذیل سوالات میں سے کوئی چار (4) کے مختصر جوابات مطلوب ہیں۔
- ہر سوال کے لئے پانچ (5) نشانات مختص ہیں۔
- (1) غزل کے پہلے شعر کو کیا کہتے ہیں؟ مثال کے ساتھ لکھئے۔
- (2) حکایت کسے کہتے ہیں؟ حکایت ”دویار“ کا خلاصہ بیان کیجئے۔
- (3) اقبال کے شعری مجموعوں کے نام لکھئے۔
- (4) مقطع کسے کہتے ہیں؟ مثال کے ساتھ لکھئے۔
- (5) ڈرامے کے اجزائے ترکیبی پر روشنی ڈالیے۔
- (6) سفر نامہ پر نوٹ لکھئے۔

SECTION 'B'

5x10=50

- II تمام سوالات کے جوابات مطلوب ہیں۔
- (7) (a) نظم ”مستقبل“ میں شاعر نے کس چیز کو پیش کیا ہے؟
 (b) ”فنون لطیفہ“ میں اقبال نے کیا پیغام دیا؟ تفصیل سے لکھئے۔
- (8) (a) میر تقی میر کو ”خدائے سخن“ کیوں کہا جاتا ہے؟
 (b) اردو شاعری کی روایت کا سہرا آئی کے سر ہے کیوں؟
- (9) (a) نظم ”توحید“ کا مرکزی خیال بیان کیجئے۔
 (b) غزل کی تعریف کیجئے اور اس کی خصوصیت بیان کیجئے۔
- (10) (a) اردو غزل کے اجزائے ترکیبی بیان کیجئے۔
 (b) مظہر علی خان ولا کی حکایتوں کا خلاصہ لکھئے۔
- (11) (a) ولی دکنی کی شاعرانہ خصوصیت بیان کیجئے۔
 (b) سراج اورنگ آبادی کے حالات زندگی پر نوٹ لکھئے۔

☆☆☆

Faculty of Commerce, Sciences, Business Management
B.Com/B.Sc/BBA I-Year, I- Semester Examination, December 2023
Subject: Second Language Arabic
PAPER: CLASSICAL PROSE, MODERN PROSE, GRAMMAR, AND HISTORY OF
ARABIC LITERATURE

Time: 3 Hours

Max Marks: 70

Section-A

Answer any FOUR of the following questions. Each question carry 5 marks.
 (4x5=20 Marks)

1. Translate the following verses:

1) ترجم الآيات التالية:

ورفعنا لك ذكرك O فإن مع العسر يسرا O إن مع العسر يسرا
 O

2. Answer the following question:

3) أجب عن السؤال الآتية في العربية:

أين يسكن عبد الرحمن؟

3. How many kinds of word? What are they?

5) كم قسما للكلمة؟ وما هي؟

1. Write the names of the poets who belong to pre-Islamic period?

2. Answer in Arabic: 6) أكتب أسماء الشعراء في العصر الجاهلي:

4) أجب باللغة العربية:

ما المراد بالنظافة الخاصة؟

3. How many kinds of word? What are they?

5) كم قسما للكلمة؟ وما هي؟

4. Explain the following verses:

6) اشرح الآيات الكريمة:

والتين O والزيتون O وطور سينين O وهذا البلد الأمين O

Section-B

II. Answer the following questions. Each question carry 10 marks (5x10=50 Marks)

5. a) Write the Summary of Surah At Teen.

7) (ألف) اكتب خلاصة "سورة التين"

Or

b) Explain the summary of Suratul Inshirah in detail.

ب) اكتب تفسير "سورة الانشراح".

6. a) Write the Summary of "An Nazafa".

8) (ألف) اكتب خلاصة "النظافة"

Or

b) Write the conversation of "Al Hiwar".

ب) اكتب محادثة "الحوار"

7. a) Define Singular, Dual and Plural with examples.

9) (ألف) عرف المفرد، المثنى، والجمع مع الأمثلة

Or

b) Explain the kinds of word with examples.

ب) اشرح أقسام الكلمة مع الأمثلة

8. a) Write a brief note on "Hanging Odes":

10) (ألف) اكتب المقالة الوجيزة حول "المعلقات السبع"

Or

b) What do you know about characteristics of Arabic Language:

ب) ماذا تعرف عن ميزات اللغة العربية

9. a) Translate and explain the following verses with reference to the context:

11) (ألف) ترجم و اشرح الآيات التالية مع الإشارة إلى نصها:

لقد خلقنا الانسان في احسن تقويم ٥ ثم رددنه اسفل سافلين ٥ الا الذين آمنوا وعملوا الصلحت
فلهم اجر غير ممن ون ٥

Or

b) What do you know about the poetry in Islamic Period?

ب) ماذا تعرف عن الشعر في العصر الإسلامي.

B.Sc. (Mathematics) I-Year CBCS I-Semester Regular Examinations Jan- 2024

Paper: DIFFERENTIAL AND INTEGRAL CALCULUS

Time: 3 Hours

Max. Marks: 70

SECTION – A

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

(6 x 5 = 30 Marks)

1. If $z = \sin^{-1}\left(\frac{x}{y}\right) + \tan^{-1}\left(\frac{y}{x}\right)$ then solve that $x \frac{\partial z}{\partial x} + y \frac{\partial z}{\partial y} = 0$.

2. If $U = \frac{1}{\sqrt{x^2+y^2+z^2}}$ then show that $\frac{\partial^2 U}{\partial x^2} + \frac{\partial^2 U}{\partial y^2} + \frac{\partial^2 U}{\partial z^2} = 0$.

3. If $z = x^2 + y^2$ and $x = at^2, y = 2at$ then evaluate $\frac{\partial z}{\partial t}$.

4. If $x^y = y^x$ then find $\frac{dy}{dx}$.

5. Find the radius of Curvature of the Curve $r = a(1 - \cos\theta)$.

6. Find the radius of curvature of the curve $y^2(a - x) = x^2(a + x)$ at the origin.

7. Find the length of the arc of the curve $y = \log \sec x$ from $x = 0$ to $x = \pi/3$.

8. Find the surface of a Sphere of radius 'a'.

9. If $f = y \cos(xy)$ the find $\frac{\partial f}{\partial x}$ and $\frac{\partial f}{\partial y}$.

10. If $H = f(y-z, z-x, x-y)$ the show that $\frac{\partial H}{\partial x} + \frac{\partial H}{\partial y} + \frac{\partial H}{\partial z} = 0$

SECTION B

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

(4 x 10 = 40 Marks)

11.(a) Define Homogeneous function. State and prove that Euler's Theorem.

OR

(b) If $U = \tan^{-1}\left[\frac{x^3+y^3}{x-y}\right]$ then prove that $x^2 \frac{\partial^2 u}{\partial x^2} + 2xy \frac{\partial^2 u}{\partial x \partial y} + y^2 \frac{\partial^2 u}{\partial y^2} = (1 - 4\sin^2 u)\sin 2u$.

12.(a) Expand $f(x, y) = x^2 + 3y - 2$ is power of $(x-1)$ and $(y+2)$ by Taylor's Theorem.

OR

(b) In a plane triangle ABC. Find maximum value of $U = \cos A \cos B \cos C$ where A, B, C are angles of the triangle.13.(a) Find the centre and circle of curvature of the curve $\sqrt{x} + \sqrt{y} = \sqrt{a}$ at a point

$\left(\frac{a}{4}, \frac{a}{4}\right)$

OR

(b) Find the centre of curvature and equation of Evolute of the Hyperbola $y^2 = 4ax$.14.(a) Find the perimeter of the loop of the Curve $9ay^2 = (x - 2a)(x - 5a)^2$ between $x=2a$ and $x=5a$

OR

(b) Find the volume of the Solid obtained by revolving the Ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ about X-axis.

Faculty of Science

B.Sc. (Physics) I-Year CBCS I-Semester Regular Examinations Jan – 2024

Paper: Mechanics and Oscillations

Max. Marks: 70

Time: 3Hours

SECTION – A

(6X5=30Marks)

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

1. Explain the Divergence of a vector field and give its physical significance with examples.
2. Prove that $\text{curl grad } \vec{A} = 0$.
3. Define "Impact parameter".
4. Obtain the equation of motion for a rotating rigid body.
5. Discuss the conservative nature of "Central Force".
6. Deduce Einstein's mass-energy relation $E = m.c^2$.
7. Write a note on Lissajous Figures.
8. What are 'relaxation time' and 'Q-factor'?
9. Show that $\text{curl curl } \vec{A} = \text{grad div } \vec{A} - \nabla^2 \vec{A}$.
10. Deduce the frequency and Q-factor for a circuit with $L = 2 \text{ mH}$, $C = 5 \mu\text{F}$ and $R = 0.2 \Omega$.

SECTION – B

(4X10=40Marks)

II. Answer ALL questions. All questions carry equal marks.

11. a) Define curl of a vector field and explain its Significance. State and prove Stoke's theorem. (2+2+6)

(OR)

- b) State and prove Green's theorem. And by using Gauss divergence theorem; find the value of

$$\iint \vec{F} \cdot \vec{n} ds, \text{ if } \vec{F} = 2x \hat{i} + 5y \hat{j} + 6z \hat{k}. \quad (7+3)$$

12. a) Explain the motion of a system of variable mass. Derive the expression for velocity of rocket. (4+6)

(OR)

- b) What is a rigid body? Derive the Euler equations for a rigid body rotating about a fixed axis. (3+7)

13. a) State Kepler's laws. Prove the Kepler's first law. (3+7)

(OR)

- b) Derive Lorentz transformation equations from the special theory of relativity and show that at low velocities they reduce to Galilean transformation equations? (10)

14. a) What is simple harmonic oscillator? Derive equation of motion of simple harmonic oscillator and find its solution. (3+7)

(OR)

- b) What are damped oscillations? Obtain the differential equation and discuss its solution under different conditions. (3+7)

Code: 1301/R

Faculty of Science

B.Sc. (Computer Science) I-Year CBCS I-Semester Regular Examinations Jan- 2024

Paper: Programming in C

Time: 3 Hours

Max. Marks: 70

SECTION – A

I. Answer any SIX of the following questions.

(6 x 5 = 30 Marks)

1. Describe Structured Programming Concept.
2. Explain Type Conversions in C.
3. Specify various Input/Output Functions.
4. Differentiate between break and continue statements.
5. Write a short note on Inline Functions.
6. Describe Pointer Arithmetic Operations.
7. How to declare Structure and its members, Union and its members?
8. Explain some File Management Functions.
9. Specify the Symbols used in drawing a Flow Chart? Explain with an example.
10. Discuss about Escape Sequences.

SECTION B

II. Answer the following questions.

(4 x 10 = 40 Marks)

11. (a) Explain the Generation and Classification of Programming Languages.
OR
(b) Describe C Tokens, Identifiers and Data Types with examples.
12. (a) Describe the Control Statements used in C.
OR
(b) How to Represent Memory in Arrays? Explain by an example program.
13. (a) Define Function. Explain the Concept of Functions. Write a program for Call-by-Value.
OR
(b) What are the uses of Pointers? Explain Arrays of Pointers concept with an example program.
14. (a) Write programs to depict Array of Structures and Array of Unions.
OR
(b) What are Files? How to use Files in C? Write a C program to copy the contents of one file into another.

Faculty of Science

B.Sc. (Statistics) I-Year CBCS I-Semester Regular Examinations Jan- 2024

Paper: Descriptive Statistics and Probability

Time: 3 Hours

Max. Marks: 70

SECTION – A

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

(6 x 5 = 30 Marks)

1. Write down the difference between primary and secondary data ?
2. Define measurement scale, nominal and ordinal ?
3. Write down the axiomatic definition of probability ?
4. Define the conditional probability ?
5. Define probability mass function ?
6. Explain independence of two random variables ?
7. An urn contain 7 white and 3 red balls. Two balls are drawn together at random from the urn ? Find the expected no of white balls drawn ?
8. Let X be a discrete random variable with following probability distribution ?

X :	-3	6	9
P(X):	1/6	1/2	1/3

 find the mean and variance ?
9. What is secondary data ? Write it's merits and demerits ?
10. If X is a random variable and a & b are constants the (i).Cov(ax,by)=ab Cov(x,y)

SECTION B

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

(4 x 10 = 40 Marks)

11. (a) Define dispersion ? Explain various measures of dispersion ?
OR
(b) What is skewness? Explain various measures of skewness?
12. (a) State and prove Baye's theorem?
OR
(b) Prove multiplication theorem of probability for 'n' events ?
13. (a) Define the following
 (i) joint distribution of two random variables,
 (ii) marginal distribution,
 (iii) conditional distribution ?
OR
(b) If X and y are two random variables having joint density function $f(x,y) = \frac{1}{8}(6-x-y)$;
 $0 \leq x \leq 2$, $2 \leq y \leq 4$ = 0 other wise Find $P(x+y < 3)$?
14. (a) Define characteristics function. State it's properties. How the moments are obtained using characteristics function ?
OR
(b) State and prove chebychev's inequality ?

Faculty of Science

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

Paper: Fundamentals of Information Technology

Time: 3 Hours

Max. Marks: 70

SECTION – A

I. Answer any SIX of the following questions.

(6 x 5 = 30 Marks)

1. How are characters represented in binary code in computer systems?
2. Describe different input units used for acquiring data in a computer system.
3. What is data storage, and why is it a crucial aspect of computing?
4. Describe how the CPU interacts with memory and input/output units.
5. Define WAN and distinguish it from LAN.
6. Define E-Ink display and its characteristics.
7. How do cost, schedule and quality factors influence each other in software projects?
8. Define structured programming and its principles.
9. Explain the impact of scale on software projects.
10. Define an operating system and its functions.

SECTION B

II. Answer the following questions.

(4 x 10 = 40 Marks)

11.(a) Define data acquisition and its relevance in computing. Explain the significance of accurate data acquisition in various applications.

OR

(b) Outline the basic components of a computer in a simple model. Explain the role of the CPU in the context of the computer model.

12.(a) Explain the concept of Read-Only Memory (ROM) in data storage. When and why is ROM used in computing?

OR

(b) What is the Central Processing Unit, and what role does it play in a computer? Why the CPU is often referred to as the "brain" of the computer?

13. (a) Define input and output devices in computing. Why are input-output devices essential for user interaction with computers?

OR

(b) Explore the classification of programming languages based on applications. How does the choice of programming language depend on the intended application?

14.(a) Explore the components of software processes. Why is it important to have well-defined and structured processes in software development?

OR

(b) Define coding standards and their role in software development. How do coding Standards contribute to collaboration and code maintenance?

Data science
~~computer~~

Code: 1309/R

Faculty of Science

B.Sc. (~~Honors~~) I-Year CBCS I-Semester Regular Examinations Jan – 2024

Paper: FUNDAMENTALS OF INFORMATION TECHNOLOGY

Time: 3 Hours

Max. Marks: 40

SECTION – A

I. Answer any EIGHT of the following questions.

(8 x 2 = 16 Marks)

1. Hardware Vs Software
2. Application Software vs Systems Software.
3. Object Oriented Programming
4. Data Representation
5. Main memory
6. Compression and Decompression
7. Internet
8. Define network.
9. HTML
10. MIS
11. Define Threats.
12. Safeguarding communications.

SECTION B

II. Answer the following questions.

(4 x 6 = 24 Marks)

13. (a) Explain various Kinds of Computers

OR

(b) Define Operating System. Write about the functions of Operating Systems.

14. (a) Write about various Input and Output Devices.

OR

(b) Write about the advantages and disadvantages of File Management Systems.

15. (a) Explain in detail about different Communication networks.

OR

(b) Write about the features of Word Processing.

16. (a) Discuss the six phases of System Analysis and Design.

OR

(b) Explain Software Development Life Cycle.

Faculty of Sciences
B.Sc(Honors) I-Year, CBCS-I Semester Regular Examinations Jan-2024
PAPER: English Communication

Time: 2 Hours

Max Marks:40

Section-A

I. Answer any *TWO* of the following questions

(2x4=8Marks)

1. Why is public speaking important?
2. How to face an Interview confidently?
3. What is close reading?
4. What are the features of report writing?

Section-B

II. Answer any *two* of the following questions

(2x16=32Marks)

5. Explore the difference between Interpersonal and Intra personal communication?
6. Explain the barriers of Effective communication and how to overcome them?
7. Why is Analyzing and Interpreting important?
8. How many types of letters are there? Explain with example.

B.Sc. (Honors) I-Year CBCS I-Semester Regular Examinations Jan – 2024

Paper: STATISTICS AND PROBABILITY MODELS

Time: 3 Hours

Max. Marks: 70

SECTION – A

I. Answer any SIX questions. All questions carry equal Marks (6 x 5 = 30 Marks)

1. What is secondary data? Write its merits and demerits?
2. State and prove addition theorem of probability for two events?
3. Define probability density function?
4. Define characteristics function?
5. Application of poisson distribution?
6. Define negative binomial distribution?
7. Define rectangular Distribution?
8. Define standard Normal variate?
9. Explain the concepts of kurtosis?
10. Define exponential distribution?

SECTION B

II. Answer any ALL questions. All questions carry equal Marks (4 x 10 = 40 Marks)

11.(a) What is skewness ? Explain various measures of skewness?

OR

(b) Explain the mathematical and statistical definitions of probability?

12.(a) Define marginal and conditional distribution for continuous random variables?.

OR

(b) Define M.G.F.? State and prove properties of moment generating function?

13.(a) Derive the probability mass function of the binomial distribution and find its mean and variance β_1 and β_2 ?

OR

(b) Explain geometric distribution? obtain its mean and variance?

14.(a) Define beta distribution of the first kind and find its mean and variance ?

OR

(b) Explain cauchy distribution? Give its properties?

Faculty of Science

B.Sc. (Honors) I-Year CBCS I-Semester Regular Examinations Jan – 2024

Paper: CALCULUS AND DIFFERENTIAL EQUATIONS

Time: 3 Hours

Max. Marks: 70

SECTION – A

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

(6x5=30 Marks)

1. Solve $y = (1/x)^x$ then show that $y_2(1) = 0$.
2. Find the n^{th} derivative of $y = \frac{4x}{(x-1)^2(x+1)}$.
3. Solve $x \frac{dy}{dx} + y = xy^3$.
4. Solve $(1 - xy) - x(1 + xy)dy = 0$.
5. Solve $x = y - p^2$.
6. Solve $(y - xp)(p - 1) = p$.
7. Solve $(D^5 + 10D^3 + 9D) = 0$.
8. Solve $(D^3 - D^2) = 2x^3$.
9. Solve $(x^2 - ay) + (y^2 - ax)y = 0$.
10. Solve $(D^4 - 8D^2 + 16) = 0$.

SECTION B

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

(4 x 10 = 40Marks)

11. (a) If $y = a \cos(\log x) + b \sin(\log x)$ then show that $x^2 y_{n+2} + (2x + 1)xy_{n+1} + (n^2 + 1)y_n = 0$.
 - (b) If $y = \frac{\sin^{-1}x}{\sqrt{1-x^2}}$ then show that $(1 - x^2)y_{n+2} - (2n + 3)xy_{n+1} - (n - 1)y_n = 0$.
- OR**
12. (a) Solve: $y \frac{dy}{dx} = y^3 e^{-x^2}$.

OR

(b) Prove that the necessary sufficient condition for an exact differential equation $Mdx + Ndy = 0$ be exact is that $\frac{\partial M}{\partial y} = \frac{\partial N}{\partial x}$

13. (a) Solve: $p^2 + 2py \cot x = y^2$.

OR

- (b) Solve: $p^3 - (y + 3) + x = 0$.

14. (a) Solve: $(D^2 + a^2)y = \tan ax$ by method of variation of parameter.

OR

- (b) Solve: $(D^2 + 1) = x \cos 2$.

Faculty of Science

B.Sc (Honors) 4th Year, CBCS-III Semester Regular Examinations Jan-2024

PAPER: Programming with C

TIME: 3 HOURS

MAX. MARKS: 70

SECTION-A

I. Answer any SIX of the following Questions

6x5 = 30 Marks

1. Write the Parts of simple C program. Explain Compilation and Linking process of a C program.
2. Write about Escape Sequence.
3. Differentiate between while and do-while.
4. How to initialize and display Character Arrays? Explain with sample code.
5. What are Pointers? What is Address of Operator? How to represent them?
6. Differentiate between Call-by-Value Vs Call-by-Reference.
7. Discuss about Enumeration Types.
8. What are Files? How to use Files in C?
9. What are the different Tokens used in C? Specify them.
10. Explain switch statement with example program.

SECTION-B

II. Answer the following Questions

4X10 = 40 Marks

11. A) What are different Data Types used in C? Explain Type Conversions in C.

OR

B) Discuss about Non Formatted Input and Output Functions.

12. A) Describe the Control Statements used in C.

OR

B) How to represent Multi Dimensional Arrays? Write a C Program to display a 3D Matrix.

13. A) How to pass Arrays to Functions? Explain with an example program.

OR

B) Describe Dynamic Memory Allocation using Pointers with example program.

14. A) Differentiate between Structures Vs Unions.

OR

B) Describe the working with Binary Files.