DEPARTMENT OF SCIENCE

Department:SCIENCE Program:B.Sc
Semester: I Name of the Subject: ENGLISH

QUESTION BANK

UNIT-I:INTRODUCTION:	
Unit – I Markets have been said to reflect the 'soul' of the city . they are places where the inhabitants of the city visit to buy daily necessities and wants, as well where tourists come to buy the objects unique to that city as souveniers.below are the questions to test the knowledge regarding the concept bazaars of Hyderabad.	
PART –A	
S NO	**SHORT QUESTIONS**
1	Describe the variety of articles the gold smiths make. Who will buy these things?
2	Can you think of a reason why the musicians and magicians are paired together in one stanza ? elaborate on your answer.
3	Comment on the juxtaposition of the flower- girls making garlands for bridegroom, while also making them for corpses at the same time.
4	How does this poem balance the physical world with philosophical?
5	The swadeshi movement launched during the freedom struggle urged Indians to boycott british products and to rely on local ones. Re-read naidu's biography on page 1 , and discuss what relevance the poem must have in this context.
6	What did the narrator like about his travelling companion ?
7	Compare how the narrator and the new passenger each form an impression of the girl.
8	Describe what happens when the girl gets off the train.
9	Why do you think the narrator tries to trick people into believing he can see ?
10	**How does the girl respond to the narrator's questions?**
	PART –B
S NO	**LONG QUESTIONS**
1	**Describe the scene of the bazaar in your own words ?**
2	**Reading this poem is an experience that involves the senses. Discuss.**
3	What do you think are the special features of the bazaar ? how does it compare it with a fair bazaar in your town ?
4	**What are the instances in the story where it is evident that both the narrator and the girl are blind ? how do they try to mislead each other ? do they succeed?**
5	Several times in the conversation , the narrator tries to cover up his disability.Identifythese instances and comment upon them.

UNIT-II:INTRODUCTION:	
UNIT - II:	
PART -A	
S NO	**SHORT QUESTIONS**
1	The title of the poem is short and to the point . how does this apply to the overall theme of the poem ?
2	Explain the significance of the final two lines of the poem .
3	Explain the poets thoughts on the subject of patience
4	What does the poet say about perserverance
5	Briefly explain about the following with reference to context : But make allowance for their doubting too
6	Does the author feel sympathy for the lift man ? elaborate on your answer .
7	Write a short character sketch of the conductor
8	What does the author mean when he says that bad temper is infectious?
9	What is the significance of the chesterfield anecdote to the authors argument ?
10	Why is the author grateful that discourtesy is not a punishable offence ? do you agree with the authors opinion ?
	PART –B
S NO	**LONG QUESTIONS**
1	**What kind of a person does the poet want his child to be ? what are the qualities that the poet is espoushing?**
2	**According to the poem , what are some of the challenges that a person will have to face in life ?**
3	Summarise the poets message in your words. Do you agree with it ?
4	**Why , according to the author , is it important to exhibit good social graces ?**
5	**Comment on the importance of patience with respect to the theme of this essay.**

UNIT-III:INTRODUCTION:	
Unit – III	
PART -A	
S NO	**SHORT QUESTIONS**
1	Who is the speaker of the poem , and what does he want to do ?
2	How does Ulysses describe Ithaca and its people? What is his attitude towards his subjects?
3	Who is telemachus, and what kind of a person does he seem to be?

4	“how dull it is to pause... not to shine in use” how does this statement reflect ulyssess attitude to life ?
5	Explain the meaning and significance of the following line : b. made weak by time and fate , but strong in will / to strive , to seek , to find and not to yield.
6	our failure is in exact ratio to the seriousness of the occasion , and to the depth of our feeling . what failure is Beerbohm talking about ? explain the meaning of this statement .
7	What about le ros surprisedBeerbohm at the train station ?
8	Elaborate on the purpose and working of the AASB in your own words.
9	Beerbohm says that despite being a good actor , le ros never found success on the London stage . comment on this statement in the light of the essay.
10	**Why does the author say that he envied le ros ? how is this connected to his request to le ros**
	PART -B
S NO	**LONG QUESTIONS**
1	**What is the theme of the poem? How does the poet communicate this to the reader through the images of the poem ?**
2	**Some modern critics condemn Ulysses for selfishly abandoning his responsibilities as a husband , father and king – in order to pursue his own goals. In your opinion , is Ulysses a heroic or an unheroic figure ?**
3	Who was Hubert le ros ? describe him and his personality in your own words. What difference did the author notice between le ross previous and present circumstances ?
4	**How did the authors farewell at the train station differ from le ros send off ? what was ironic about this difference ?**
5	**What is beerbohms attitude towards seeing people of f at a port or train station ? why does he feel this way , and what does he prefer instead ?**

UNIT-IV:INTRODUCTION:	
UNIT - IV:	
PART -A	
S NO	**SHORT QUESTIONS**
1	What does the poet accuse ‘time’ of ? what quality does the poem associate with time?
2	What prompted the poet to write this poem?
3	Whom does the poet feel jealous of , and why?
4	How does the poet console himself as the poem progresses ?
5	List the characteristic traits of the poet that you can deduce from this poem. Give brief reasons for your answer.
6	Why did Gandhi not talk at meetings ? what did people think of his silence ?
7	What was the conflict that the vegetarian society faced with regard to mr. Hills and mr.allinson? what was gandhis position ?

8 **9** **10**	What happened when mr.howard invited Gandhi to speak at a meeting ? how did Gandhi feel about the incident ? What preparations for a speech did Gandhi make before he left England ? how did the event end ? What did his experience with public speaking teach Gandhi about himself ?
	PART –B
S NO	**LONG QUESTIONS**
1	**What does Milton focus on in the first eight lines of the poem ? what change do you notice in the final six lines ?**
2	**What is the poets main cause of regret in the poem , and how does he finally come to terms with it ?**
3	Comment on the tone of the poem . do you think the poem ends on a hopeful note ? give reasons to support your answer .
4	**When a serious question came up for discussion , Gandhi says ‘ I thought it wrong to be absent , and felt it cowardice to register a silent vote’ . what light does this throw on gandhis attitude to shyness? Discuss.**
5	**Gandhi says that his shyness eventually turned out to be a useful trasit . explain**

DEPARTMENT OF SCIENCE

SUBJECT: SANSKRIT

QUESTION BANK

लघुनिबन्ध प्रश्नाः

Semester-I , UNIT-I

1. मुदाभिषेक्तुं वरद त्वमर्हसि :

1. श्रीमद्रामायण कर्ता कः ?
2. रामायणे कति काण्डः सन्ति? ते कानि ?
3. रामायण ग्रन्थात् मूलश्लोकः कः ?
4. श्रीमद्रामायणस्य वैशिष्ट्य श्लोकं लिखत ?
5. रामायणे कति श्लोकाः सन्ति ?
6. रामायण शब्दस्य व्युत्पत्ति कः ?
7. रामायण कथा उपदेशः कः ?
8. वाल्मीकि महर्षेः अपर नामानि कानि ?

Long Questions-

1. श्रीमद्रामायणञ्च वाल्मीकिमहर्षेः वैशिष्ट्यं लिखत ?
2. श्रीरामचन्द्रः उद्दिश्य अयोध्यप्रजानां मनोभिष्टं विवृणुत ?
3. श्रीरामचन्द्रस्य गुणगणान् वर्णयितुम् ?

2. हिमालयो नाम नगाधिराज :

1. "हिमालयो नाम नगाधिराजः" पाठ्यभाग रचयिता कः ?
2. कालिदास विरचिते महाकाव्यानि कानि ?
3. "हिमालयो नाम नगाधिराजः" इति पाठ्यभागः कस्मात् ग्रन्थात् स्वीकृतः ?
4. कुमारसम्भव महाकाव्ये कति सर्गाः सन्ति ?
5. "उपमा कालिदासस्या" इति श्लोकं पूरयत ?
6. कालिदास महाकवेः विरचिते नाटकानि कानि ?

7. संस्कृतवाङ्मये पञ्चमहाकाव्यानि कानि ? ते कानि ?

8. कालिदासः कस्य राजस्य आस्थान पण्डितः ?

9. कुमारसम्भव महाकाव्ये प्रथमसर्गात् कस्मात् पर्वत वर्णन् आस्ति ?

10. अकालसन्ध्यामिव धातुमत्ताम् ? इति वाक्यं विवृणुत ?

11. यस्यार्थयुक्तं गिरिराजशब्दं कुर्वन्ति बालव्यजनैश्चमर्यः। इति विवृणुतः

1. कविकुलगुरुं कालिदासमुद्दिश्य निबन्धं लिखत ?

2. हिमवत्पर्वतवर्णन कालिदासस्य प्रकृतिवर्णनाचातुर्यं विशदयत् ?

3. कालिदासेन वर्णितानुसारं नगाधिराजं हिमवन्तम् उद्दिश्य निबन्धं लिखत ?

4. कुमारसम्भवे प्रथमसर्गे उक्तरीत्या हिमवत्पर्वतस्य रमणीयतां वर्णयत् ?

5. "उपमा कालिदासस्य" इति स उदाहरणानां निरूपयतु ?

UNIT - II

3. धर्मबद्धो दौवारिकः

1. श्रूयतामेष आगच्छामि आगत्य च निखिलं निवेदयामि। इति विवृणुत।

2. तदद्यैव परिष्कृतं पारदश्रम तुभ्यं दद्मः ? इति ससन्दर्भं व्याख्यात।

3. "दौवारिक ! मया बहुशः परीक्षितोऽसि"। ससन्दर्भं व्याख्यात ?

4. "धर्मबद्धो दौवारिकः" इति पाठ्यभाग प्रधान उद्देशः कः ?

5. शिवराजवीरस्य प्रधान अमात्यः कः ?

6. अम्बिकादत्तव्यास जीवितकालविशेषांशाः के ?

7. "धर्मबद्धो दौवारिकः" पाठ्यभाग रचयिता कः ?

8. अम्बिकादत्तव्यासस्य उपाधिः कः ?

9. नवरसानि कानि ?

10. "धर्मबद्धो दौवारिकः" इति पाठ्यभागे प्रधान नायकः कः ? उपनायकः कः ?

Long Answers-

1. धर्मबद्धो दौवारिक इति पाठ्यांशे गौरवसिंहस्य पात्रं विवृणुत?
2. धर्मबद्धो दौवारिक इति पाठ्यांशस्य सारं लिखत ?
3. गौरवसिंहस्य पात्रे कविः किं निरूपयति ?
4. धर्मबद्धो दौवारिक इति पाठ्यांशे दौवारिकस्य स्वामिभक्तिम् उल्लिखत ?
5. शिवराजविजय रचयितुं परिचयं प्रस्तुवत ?

4. कृतघ्ने नास्ति निष्कृतिः

- विष्णुशर्मा

1. मनवे वाचस्पतये शुक्राय पराशराय ससुताय।
चाणक्याय च विदुषे नमोऽस्तु नयशास्त्र कर्तृभ्यः ॥
इति श्लोकं भावं अरचयत् ?
2. "पञ्चतन्त्रस्य" ग्रन्थस्य पाठ्यभाग रचयिता कः?
3. पञ्चतन्त्रे कति भागाः सन्ति ?
4. "कृतघ्ने नास्ति निष्कृतिः" इति पाठ्यभागः पञ्चतन्त्रे कति तन्त्रात् स्वीकृतः?
5. महिलारोप्य नगरं पालयितुं राजा नाम किम् ?
6. अमरशक्त्य राज पुत्राः कीदृशः?
7. समुत्पन्नेषु कार्येषु बुद्धिर्यस्या न हीयते।
स एव दुर्गं तरति जलस्थो वानरो यथा। श्लोकः भावं लिखत?
8. एकं प्रसूयते माता द्वितीयं वाक् प्रसूयते।
वाग्जातमधिकं प्रोचुः सोदर्यादपि बन्धुवत् ॥ भावं लिखतु।
9. "हितोपदेशः" कर्ता कः?
10. वैश्वदेवानमापन्नः सोऽतिथिः स्वागतिक्रमः। ससन्दर्भं व्याख्यात।

Long Answers

1. वानरमकरयोः कथां पञ्चतन्त्रमनुसृत्य वर्णयत।
2. विष्णुशर्मणः पञ्चतन्त्रस्य परिचयं कुरुत।
3. वानरमकरयोः कथां पञ्चतन्त्रमनुसृत्य वर्णयत।
4. कराटमुखस्य विश्वासघातकात् प्रयत्नात् रक्तमुखः कथं स्वं रक्षितुं यतितवान्? विवृणुत।
5. पञ्चतन्त्रमनुसृत्य रक्तमुख - कराटमुखयोः कथां संक्षेपेण लिखत?

UNIT-III

5. एष धर्मः सनातनः

1. एषधर्मः सनातनः इति पाठ्यभागे कति श्लोकाः सन्ति?
2. एष धर्मः सनातनः इति पाठ्यभागे कति विषयाः सन्ति?
3. नीति शब्दस्य व्युत्पत्तिः कः?
4. व्यवहारिक भाषे "धर्मः" इति पदस्य अर्थः कः?
5. उद्यमेन हि सिध्यन्ति कार्याणि न मनोरथैः।
   न हि सुप्तस्य सिंहस्य प्रविशन्ति मुखे मृगाः॥ श्लोक अर्थः कः?
6. कति दोषाः पुरुषाः हातव्याः? ते कानि?
7. सन्मित्र लक्षणं किम्?
8. कस्मिन् प्रान्ते न वस्तव्यम्?
9. कति दोषाः पुरुषाः न हातव्याः? ते कानि?
10. विद्यार्थी लक्षणं किम्?

Long Answers-

1. "एष धर्मः सनातनः" इति पाठ्यांशस्य सारं विवृणुत ?
2. नीतिश्लोकानाम् अध्ययनेन किम् प्रयोजनम् ? विवृणुत ?
3. "एषः धर्मः सनातनः" इति पाठ्यांशस्य अध्ययेन मानवताविकासः भवति, कथमिति निरूपयत ।

UNIT - IV

शब्दाः

1. शब्दः निर्वचनं किम् ?
2. शब्दः कति विधाः ? ते कानि ?
3. विभक्तिः नाम किम् ? कति विभक्तयः ?
4. वचनं नाम किम् ? कति ?
5. रामः दशरथस्य पुत्रः ।
   रामः सदा विजयते ॥ इति वाक्यार्थः लिखति ?
6. रामाय तस्मै नमः ।
   रामात् नास्ति परायणम् ॥ इति वाक्यार्थं लिखतु ।
7. अजन्तशब्दः निर्वचनं किम् ? उदाहरणानि कानि ?
8. हलन्तशब्दः निर्वचनं किम् ? उदाहरणानि कानि ?
9. "वारि" शब्दस्य चतुर्थी विभक्ति, द्विवचनम् किम् ?
10. रमा शब्दस्य पञ्चमी विभक्तिः किम् ?

Long Answers-

1. ऋकारान्त पितृ शब्दः सर्वविभक्ति रूपेण लिखत ?
2. अकारान्त देव, अच्युत शब्दः सर्वविभक्ति रूपेण लिखत ?

3. अकारान्त सीता, अहल्या शब्दाः संपूर्णेन लिखत ?

4. उकारान्त अम्बु, जतु शब्दाः संपूर्णेन लिखत ?

UNIT-V

सन्धयः

1. सन्धिः निर्वचनं किम् ?
2. सन्धिः शब्दस्य व्युत्पत्तिः किम् ?
3. सन्धिः कति विधाः ? ते कानि ?
4. अच् सन्धिः निर्वचनं किम् ? उदाहरणानि कानि ?
5. हल् सन्धिः निर्वचनं किम् ? उदाहरणानि कानि ?
6. सवर्णदीर्घ सन्धिः सूत्रं किम् ? उदाहरणानि लिखत ?
7. परमौदार्यम्, धातुणम् शब्दाः विघटयत ।
8. वाङ्मयम्, कश्चिन्नरः इति विघटयत ।

Long Answers-

1. व्याकरणशास्त्रे सन्धयः प्राधान्यं, प्रयोजनं विशदयत ।
2. अच् सन्धयः कति भेदाः ? सर्वे सन्धयः सूत्राणि, उदाहरणानि, लिखत ?
3. हल् सन्धयः कति भेदाः ? सर्वे सन्धयः सूत्राणि, उदाहरणानि लिखत ?

ENVIRONMENTAL STUDIES

QUESTION BANK

	UNIT - I : Ecosystem, Biodiversity & Natural Resources (15 hrs.) 1. Definition, Scope & Importance of Environmental Studies. 2. Structure of Ecosystem – Abiotic & Biotic components Producers, Consumers, Decomposers, Food chains, Food webs, Ecological pyramids) 3. Function of an Ecosystem :Energy flow in the Ecosystem (Single channel energy flow model) 4. Definition of Biodiversity ,Genetic,Species& Ecosystem diversity , Hot-spots of Biodiversity, Threats to Biodiversity , Conservation of Biodiversity (Insitu&Exsitu) 5. Renewable &Non – renewable resources, Brief account of Forest , Mineral & Energy (Solar Energy & Geothermal Energy) resources 6. Water Conservation , Rain water harvesting & Watershed management.
1.	SHORT ANSWER QUESTIONS
2.	Write briefly about Abiotic and biotic components.
3.	Discuss about food chain and food webs
4.	Write a short note on Decomposers.
5.	Write about renewable and non-renewable energy resources.
6.	Write a note on water conservation
7.	Write a short note rainwater harvesting.
8.	Discuss about solar energy.
	LONG ANSWER QUESTIONS
9.	Define Environmental studies and discuss its scope and importance
10.	Brief account of Forest resources
11.	Define and explain conservation of Biodiversity.

	UNIT – II: Environmental Pollution , Global Issues & Legislation (15 hrs.) 1. Causes, Effects & Control measures of Air Pollution, Water Pollution 2. Solid Waste Management 3. Global Warming & Ozone layer depletion. 4. Ill – effects of Fire- works 5. Disaster management – floods, earthquakes & cyclones 6. Environmental legislation :- (a) Wild life Protection Act (b) Forest Act (c) Water Act (d) Air Act 7. Human Rights 8. Women and Child welfare 9. Role of Information technology in environment and human health ϖ Field Study: (5 hours) • Pond Ecosystem • Forest Ecosystem
1	SHORT ANSWER QUESTIONS
2	Discuss about global warming
3	Discuss about depletion of ozone layer.
4	Write in brief about role of Information technology in environment and human health.
5	Discuss about women and child welfare.
6	Write about forest act and wildlife protection act.
7	Write about solid waste management.
8	Write a note on ill effects of fireworks.
9	LONG ANSWER QUESTIONS
10	Discuss about causes ,effects and control measures of Air pollution, water pollution.
11	Write a brief note about disaster management

Department:Science **Program:** **BSC(Computers)**

Semester:ISemester **NameoftheSubject:** **DifferentialandIntegralcalculus**

QUESTIONBANK

Unit -I

PartialDifferentiation:introduction–Functionoftwovariables–Neighbourhoodofapoint(a,b)–Continuityofafunctionoftwovariables,continuityatapoint–Limitofafunctionoftwovariables – partial derivatives – Geometrical representation of a Function of two variables – Homogeneousfunctions.

PART-A

SNo	SHORTQUESTIONS
1	Define functionoftwovariables and neighbourhoodofa point(a,b).
2	Definecontinuityof afunctionoftwovariablesandlimitof acontinuous function.
3	Findthe secondorder partialderivativesofthefollowing (a)e^{x-y} (b)e^x^y
4	Ifz=tan(y+ax)+ $(y-ax)^{3/2}$,findthevalue of $\frac{\partial^2 z}{\partial x^2} - a^2\frac{\partial^2 z}{\partial y^2}$
5	If u=$\begin{vmatrix} x^2 & y^2 & z^2 \\ x & y & z \\ 1 & 1 & 1 \end{vmatrix}$,showthat $u_x+u_y+u_z$ =0.
6	Ifu=$\sin^{-1}\frac{x}{y} + \tan^{-1}\frac{y}{x}$,showthat x $\frac{\partial u}{\partial x}$ +y $\frac{\partial u}{\partial y}$ =0.
7	StateandproveEuler'stheoremforhomogeneousfunctions.
8	IfZ = (x+y)φ(y/x),whereφisanarbitraryfunctionprovethat x $\frac{\partial z}{\partial x}$ +y $\frac{\partial z}{\partial y}$ =Z.
9	If u= log{ $\frac{x^4+y^4}{x+y}$},showbyEuler'stheoremthatx $\frac{\partial u}{\partial x}$ +y $\frac{\partial u}{\partial y}$ =3.
10	If u= log $\frac{x^2+y^2}{x+y}$,provethatx $\frac{\partial u}{\partial x}$ +y $\frac{\partial u}{\partial y}$ =1.

PART-B

SNo	LONGQUESTIONS
1	Ifu=log($x^3+y^3+z^3$-3xyz)showthat (a)($\frac{\partial}{\partial x}+\frac{\partial}{\partial y}+\frac{\partial}{\partial z}$)^{2}u= $\frac{-9}{(x+y+z)^2}$ and (b) $\frac{\partial^2 u}{\partial x^2}+\frac{\partial^2 u}{\partial y^2}+\frac{\partial^2 u}{\partial z^2}$ = $\frac{-3}{(x+y+z)^2}$
2	Findthevalueof $\frac{1}{a^2}\frac{\partial^2 z}{\partial x^2}+\frac{1}{b^2}\frac{\partial^2 z}{\partial y^2}$, whena^2+b^2-c^{2}z^2=0.
3	IfZ=(x+y)+(x+y)(y/x),provethatx[$\frac{\partial z}{\partial x}-\frac{\partial z}{\partial y}$]=y[$\frac{\partial^2 z}{\partial x^2}-\frac{\partial^2 z}{\partial y\partial x}$].
4	Ifu =$\tan^{-1}\frac{x^3+y^3}{x-y}$,x≠y showthat (a)x $\frac{\partial u}{\partial x}$ +y $\frac{\partial u}{\partial y}$ = sin 2u (b)$x^2\frac{\partial^2 u}{\partial x^2}$ +2xy $\frac{\partial^2 u}{\partial x\partial y}$ +$y^2\frac{\partial^2 u}{\partial y^2}$ =(1-4$\sin^2$u)sin2u.
5	Ifu=$\sin^{-1}\left\{\frac{x^{1/3}+y^{1/3}}{x^{1/2}+y^{1/2}}\right\}^{1/2}$,showthatx$^2\frac{\partial^2 u}{\partial x^2}$ +2xy $\frac{\partial^2 u}{\partial x\partial y}$ +$y^2\frac{\partial^2 u}{\partial y^2}$ = $\frac{\tan u}{144}$(13+$\tan^2$u).

Unit-II
Theorem on total differentials – Composite functions – Differentiation of compositefunctions–Implicitfunctions–Equalityoff$_{xy}$(a,b)andf$_{yx}$(a,b)–Taylor'stheoremfora functionoftwovariables–MaximaandMinimaofafunctionoftwovariables–Lagrange'smethodofundeterminedmultipliers.

PART-A

SNo	SHORTQUESTIONS
1	Find $\frac{dz}{dt}$ whenz=xy^2+x^{2}y,x=at^2,y=2atverifyby directsubstitution.
2	Prove thatif y^3-3ax^2+x^3 =0, then $\frac{dy}{dx^2}+\frac{2ax^2}{y^5}=0$
3	If z= $\frac{sinu}{cosv}$, u = $\frac{cosy}{sinx}$,v= $\frac{cosx}{siny}$,find $\frac{\partial z}{\partial x}$.
4	Find $\frac{dy}{dx}$ forthe equationxsin(x-y)-(x+y)=0
5	IfH= f(y-z, z-x,x-y)then showthat $\frac{\partial H}{\partial x}+\frac{\partial H}{\partial y}+\frac{\partial H}{\partial z}=0$.
6	IfF(x,y,z) =0find $\frac{\partial z}{\partial x},\frac{\partial z}{\partial y}$.
7	Find $\frac{d^2y}{dx^2}$ forx^3+y^3=3axy.
8	Expandf(x,y)=6x^{2}y^{2}asaTaylorseriesin termsof(x-1) and(y-1).
9	Expandx^{2}y +3y-2in powersofx-1andy+2.
10	Definestationaryandextreme points.

PART-B

SNo	LONGQUESTIONS
1	Iff(x,y)possessescontinuoussecondorderpartialderivativesf$_{xy}$andf$_{yx}$thenf$_{xy}$=f$_{yx}$.
2	In a triangle ABC, the angles and sides a and b are made to vary in such a way that thearearemainsconstant.Showthataandbvaryby smallamountsδa,δbrespectively, thencosAδa+ cosBδb=0.
3	Show thattheminimum valueofu(x,y)=xy+ $\frac{a^3}{x}+\frac{a^3}{y}$ is3a^2.
4	Findthe minimumvalueofx^2+y^2+z^{2}subjecttothe conditionx+2y – 4z=5.
5	Findthe maximum andminimumvaluesof f(x,y)=x^4+2x^{2}y-x^2+3y^2.

Unit- III
CurvatureandEvolutes:introduction–definitionofcurvature–RadiusofCurvature– LengthofarcasaFunction,DerivativeofarcRadiusofcurvature–Cartesianequations– Newtonianmethod–CentreofCurvature–ChordofCurvature. **Evolutes:evolutesandInvolutes –Propertiesoftheevolute.** **Envelopes: One parameter family of curves – Consider the family of straight lines – Definition – Determinationofenvelope**.

PART-A

SNo	SHORTQUESTIONS
1	Findtheradiusofcurvature forthecurvey= $\frac{30}{x}$ atP(3,10).
2	Findthe radiusofcurvatureofthecurvey = ccosh$\frac{x}{c}$at anypointP(x,y).
3	Findtheenvelope ofthefamily of curvesy=mx+am^3.
4	Findtheenvelopeof thefamilyofstraight linesy=mx+ $\frac{1}{m}$.
5	Showthatthechordofthecurvaturethroughthepoleofthecurver^n=a^ncosnθis$\frac{2}{n+1}$.
6	Findthe envelopeofthefamilyofstraightlines $\frac{x}{a}+\frac{y}{b}$=1,where a+ b= c,cisa constant.
7	**Findtheenvelopeofthefamilyofstraightlinesxcosα+ysinα=awhereαisaparameter**
8	**Findtheenvelopex2sinα+y2cosα=a2whereαisaparameter**
9	UsingNewton'smethodfindtheradiusof curvaturefor the curvex^3+y^3-2x^2+6y= 0at theoriginO (0,0).
10	UsingNewton'smethodfindthe radiusofcurvaturefor the curvey=x^4-4x^3-18x^2atthe originO (0,0).

PART-B

SNo	LONGQUESTIONS
1	Provethatthe curvature ofacircleisconstant.
2	Findtheevoluteof theellipsex= acosθ, y= bsinθ.
3	(a) Findtheevoluteofthehyperbola2xy =a^2. (b) Findtheenvelopeofthe curve $[]^m\frac{x}{a}\pm[]^m=1\frac{y}{a}$Wherea^n+b^n=c^n.
4	Find theenvelope ofthe family ofparabolas$[\frac{x}{a}]^{1/2}+[\frac{y}{a}]^{1/2}$=1.Whereab=$c^2$.
5	Findtheradius ofcurvatureattheoriginforthecurvex^4–y^4 +x^3–y^3+x^2–y^2 +y= 0.

Unit-IV
Lengthsofplanecurves:Introduction–Expressionforthelengthsofcurvesy=f(x)–expressionsforthelengthofarcsx=f(y);x=f(t),y=φ(t);r=f(t) Volumesandsurfacesofrevolution:Introduction-Expressionforthevolumeobtainedbyrevolvingabouteither axis-expressionforthevolumeobtainedbyrevolvingaboutanyline-areaofthesurfaceofthefrustumofacone-Expressionforthesurfaceofrevolution-PappusTheorems-Surfaceofrevolution

Lengths of plane curves: Introduction – Expression for the lengths of curves y = f(x) – expressions for the length of arcs x = f(y); x = f(t), y = φ(t); r = f(t)
Volumes and surfaces of revolution: Introduction-Expression for the volume obtained by revolving about either axis-expression for the volume obtained by revolving about any line-area of the surface of the frustum of a cone-Expression for the surface of revolution-Pappus Theorems-Surface of revolution

PART-A

SNo	SHORTQUESTIONS
1	Findthelengthof thecurvey= $x^{3/2}$fromx= 0tox=4.
2	Findthelengthof thecurvey= $\frac{1}{3}(x^2+2)^{3/2}$fromx= 0tox=3.
3	Findthelengthof thecurvex= e^{θ}sinθ,y =e^{θ}cosθfromθ=0 to θ=π/2.
4	Findthelengthof thearcof thecurvex =t^2cost,y=t^2sint.
5	Findthevolumeofthesolid.Obtainedbyrevolvingtheellipse $\frac{x^2}{a^2}+\frac{y^2}{b^2}$ =1aboutx-axis.
6	Findthevolumeof the regiongeneratedbyrevolvingthe curvey =cosx,y =0from x= 0tox=π/2aboutx– axis.
7	**Findthesurfaceofasphereofradius'a'.**
8	Derivetheexpressionforthe surfaceareaofthefrustumofacone.
9	Provethatthevolumeofthe reelformedby therevolutionofthecycloidx =a(θ+ sinθ), y =a(1- cosθ) aboutthex–axis isπ^{2}a^3.
10	Theareaincluded between thecurvey^2=x^3 andx^2=y^3 is rotated about thex –axis.

PART-B

SNo	LONGQUESTIONS
1	Show thatthevolumeof the solidobtainedby revolvingabout x – axis thearea enclosed bytheparabolay^2= 4axanditsevolute27ay^2= 4(x–2a)^{3}is 80πa^3.
2	Showthatthelengthof thecurvex^2=a^2(1–e$^{y/a)}$measured fromO(0, 0)toP(x, y) is a log($\frac{a+x}{a-x}$) –x.
3	Findthevolumeofthesolidobtainedbyrevolvingonearcofthecycloidx=a(θ+sinθ),y=a(1+cosθ)aboutx–axis
4	Provethatthelengthoftheacofthecurvex=asin2θ(1+cos2θ),y=acos2θ(1–cos2θ) means used fromO(0, 0) toP(x,y)is $\frac{4}{3}$ asin3θ.
5	Findthe volumeofthesolid. Obtainedbyrevolvingthecardoidr=a (1 +cosθ)about the initial line.

Department: SCIENCE Program: B Sc
Semester: Ist Semester Name of the Subject: Programming with C
QUESTION BANK

Unit - I

Introduction: Types of Languages- History of C language – Basic Structure – Programming Rules – Flow charts-algorithms–Commonly used library functions - Executing the C program - Pre-processors in “C”- Keywords & Identifiers – Constants – Variables: Rules for defining variables - Scope and Life of a Variable–- Data types - Type Conversion - Formatted Input and Output operations. Operators: Introduction – Arithmetic – Relational – Logical – Assignment - Conditional - Special - Bitwise - Increment / Decrement operator

PART -A

S No	SHORT QUESTIONS
1	Who is the father of C Language?
2	What are C tokens?
3	What is a Pre-processor directive?
4	Define Data Type.
5	What are the Relational operators in C?
6	What is the scope and life of a variable in C?
7	What is a flow chart?
8	Why do we use algorithms in C?
9	What are built in functions?
10	How many key words are there in C? Name them.

PART -B

S No	LONG QUESTIONS
1	Write the Basic structure of C program.
2	Write a few lines on: an operator, operand and expression in C.
3	Write about various data types in C.
4	What are the operators used in C language.
5	What are the formatted input and output operations in C?

Unit – II
WORKING WITH CONTROL STATEMENTS, LOOPS Conditional statements: Introduction - If statements - If-else statements – nested if-else – break statementcontinue statement-go to statement-Switch statements. Looping statements: Introduction While statements – Do-while statements - For Statements-nested loop statements.

PART -A	
S No	SHORT QUESTIONS
1	What are the conditional control statements?
2	Write about if-else statement.
3	What are the unconditional control statements?
4	Write about Do-while statements.
5	Write about while statement.
6	Write about nested looping statements.
7	Write about break statement in C.
8	Write about the switch statement.
9	What is the difference between While and Do-while statements.
10	What is go-to statement?
PART -B	
S No	LONG QUESTIONS
1	Write about conditional control statements in C. with example program.
2	Write about looping control statements. With example program.
3	Write a program to find days of week using Switch statement.
4	Differentiate between while and Do-while statements with a supporting program.
5	Write a program to find the sum of first n numbers using for loop.
Unit – III	
FUNCTIONS, ARRAYS AND STRINGS Functions: Definition and declaration of functions- Function proto type-return statement- types of functions-formatted and unformatted functions. Built in functions: Mathematical functions - String functions - Character functions - Date functions. User defined functions: Introduction - Need for user defined functions - Elements of functions – Function call – call by value and call by reference - Recursive functions. Arrays: Introduction - Defining an array - Initializing an array –characteristics of an array- One dimensional array – Two dimensional array – Multi dimensional array. Strings: Introduction - Declaring and initializing string - Reading and Writing strings - String standard functions.	

PART -A	
S No	SHORT QUESTIONS
1	Define array.
2	What is a function prototype?
3	What are built in functions?
4	Write about user defined functions.
5	What are the string handling functions?
6	What is recursive function?
7	What are function calls?
8	What are formatted functions?
9	What are unformatted functions?
10	Write about call by value and call by functions.
PART -B	
S No	LONG QUESTIONS
1	Write a program to find factorial of a number using recursion.
2	Write a program to find multiplication of matrices.
3	Write about call by value and call by reference. Give an example program for each.
4	What are the string handling functions in C? Explain with syntax and example.
5	Write the procedure to declare and initialize two dimensional arrays with example.

Unit - IV
POINTERS, STRUCTURES AND UNIONS Pointers: Features of pointers- Declaration of Pointers-arithmetic operations with pointers Structures: Features of Structures - Declaring and initialization of Structures –Structure within Structure, Array of Structures- Enumerated data type-Unions-Definition and advantages of Unions comparison between Structure & Unions.
PART -A
S No SHORT QUESTIONS

1	Write about pointer variables.
2	Define structures.
3	Define unions.
4	What is an Enumerated data type?
5	Write about features of structures.
6	What is the difference between structure and union?
7	Write about features of pointers.
8	Write the advantages of Unions.
9	Write about structure using pointers.
10	Write about calling functions with pointers as arguments.
PART -B	
S No	LONG QUESTIONS
1	What are the features of pointers? How to declare pointers?
2	What is Enumerated data type? Write an example program.
3	What are the advantages of Unions over structures?
4	Write a program to declare arrays using pointers.
5	Write a program to display student details

Department:Science

Program:B.Sc.Electronics

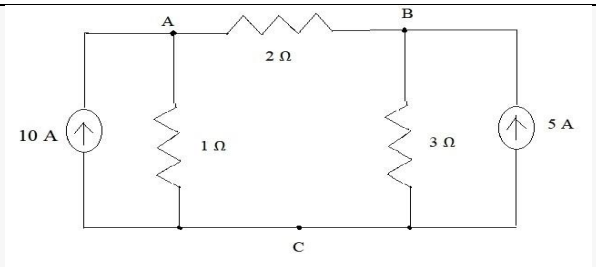
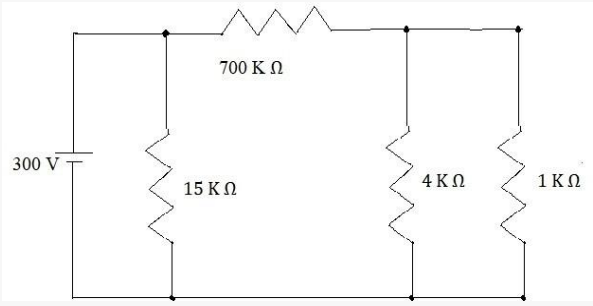
Semester:ISem

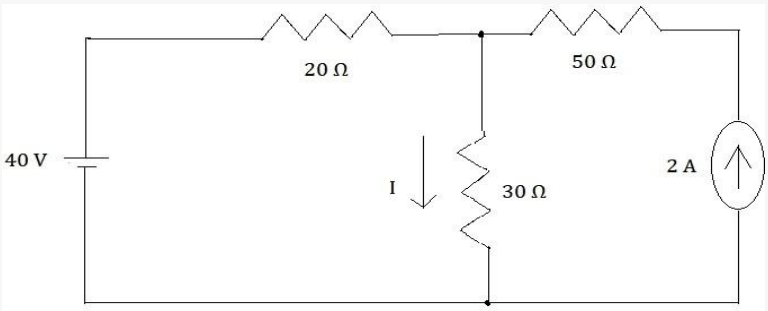
NameoftheSubject:CircuitAnalysis

QUESTIONBANK

UNIT-I:INTRODUCTION:	
Unit–I ACFundamentals,KVLandKCL:IntroductiontoKVL,KCL,ACandDC,Polarandrectangularformsofcomplex numbers,Phasorofcomplexim pedanceandadmittance,voltageandcurrentsources,applicationsofKVLandKCL,Nodal voltageandMeshanalysis.	
PART-A	
S NO	**SHORTQUESTIONS(5MARKS)**
1	DistinguishbetweenA.C.andD.C.supply
2	DefinethefollowingtermsforanA.C.signal: (i)Peakvalue(ii)Average (or)Meanvalue(iii)R.M.S.(or)Virtual(or)Effectivevalue
3	Describethephasorrepresentationofsinusoidalcurrentsandvoltages.
4	ExplainthefollowingtermsforanA.C.waveform (i)Period(ii)wavelength(iii)phaseangle(iv)peakvalue(v)timeperiod(vi)Frequency (vii)Amplitude
5	DefinewattlesscurrentinanA.C.circuit.

6	Whatisphasor?Explainphasornotation.
7	ExplainthesignificanceofOperatorjandPowerfactor.
8	Explain (i) compleximpedanceandadmittance (ii) Polarandrectangularformsofcomplexnumbers
9	Definethefollowing termsforanA.C.signal (i)Formfactor (ii)Powerfactor (iii)Operatorj (iv)Peak(or)Crestfactor
10	Whencanacurrentbewattless?Whichvalueofcurrentdoyoumeasurewithyourammeter?
	PART-B
S NO	**LONG QUESTIONS(8M)**
1	DeriveexpressionsforAveragevalue,Formfactor,andVirtualvalueofA.Cvoltage.
2	Defineandexplain KVLandKCLwithanexample.
3	DefineandexplainNodevoltage analysisandLooporMesh currentanalysis withanexample.
4	Findthecurrentthrough3Ωusingnodeanalysis.

	
5	Forthecircuitshowninthefigurefindthecurrentflowingthroughthevoltagesource. 

UNIT-II:INTRODUCTION:	
Unit–II NetworkTheorems(ACandDC):ProofandapplicationsofSuperposition,Thevenin's,Norton's,Maximumpowertransfer,Reciprocity,Milliman'stheoremstosimplenetworksforbothACandDCcircuits.	
PART-A	
S NO	**SHORTQUESTIONS(5MARKS)**
1	Define(i) Lumpednetwork(ii)Distributednetwork(iii)Linearnetwork
2	Define(i)Activenetwork (ii)Passivenetwork(iii)Non-linearnetwork
3	Whattypesofelementsarecalledlinearandnon-linearelements?Explain.
4	StateandexplainSuperpositiontheoremofD.Csources.
5	StateandexplainThevenin'stheoremofD.Csources.
6	StateandexplainNorton'stheoremofD.Csources.
7	StateandexplainMaximumpowertransfertheoremofD.Csources.
8	StateandexplainReciprocitytheoremofD.Csources.
9	StateandexplainMilliman'stheoremofD.Csources.
10	HowareThevenin'stheoremandNorton'stheoremrelatedtoeachotherandhowdotheydiffer?
	PART-B
S NO	**LONG QUESTIONS(8M)**
1	StateandproveSuperpositiontheoremandReciprocitytheoremofA.Csources.
2	StateandproveThevenin'stheoremandNorton'stheoremofA.Csources.
3	StateandproveMaximumpowertransfertheoremandMilliman'stheoremofA.Csources.
4	Whatdoyou understandbytheterms node,mesh,branchandbilateral asappliedtonetworks?
5	(i) A battery of 2.5 V is connected in series with resistance of 20 and 30 ohm. Find outequivalentvoltageandresistanceacrossthe pointsof30 ohmresistance. (ii) FindthecurrentIinthecircuitgivenbelowusingSuperpositiontheorem 

UNIT-III:INTRODUCTION:	
Unit–III RCandRLcircuits:Introductiontofilters,TransientandFrequencyresponseofRLandRCcircuits,Typesoffilters,integratinganddifferentiatingcircuits.	
PART-A	
S NO	**SHORTQUESTIONS(5MARKS)**
1	Define(i) Transientstate(ii)Steadystate(iii)Lowpassfilter(iv)highpassfilter
2	Define(i) Bandpassfilter(ii)Bandrejectfilter(iii)TimeconstantofRLandRCcircuits
3	ExplaintheworkingofRCintegratingcircuit.
4	ExplaintheworkingofRLintegratingcircuit.
5	ExplaintheworkingofRCdifferentiatingcircuit.
6	ExplaintheworkingofRLdifferentiatingcircuit.
7	DerivethetransientresponseofanRCcircuit withD.C.source.
8	DerivethetransientresponseofanRLcircuitwithD.C.source.
9	DerivethefrequencyresponseofanRCcircuitwith A.C.source.
10	DerivethefrequencyresponseofanRCcircuitwithA.C.source
	PART-B
S NO	**LONG QUESTIONS(8M)**
1	Writeashortnoteon“filtercircuits”
2	Derivethetransientresponse,time constant,steadystateresponseofRCcircuitwith A.C.source.
3	Derivethetransientresponse,time constant,steadystateresponseofRLcircuitwith A.C.source.
4	A capacitor of capacity 0.55µ F and resistance 50 MΩ is charged to a potential differenceof100V.Findthetimeconstantandthemaximumcharge stored.
5	ThetimeconstantofRCcircuitis1.5s.When1MΩresistanceisaddedinseriesthetimeconstant becomes 2 s. Find the capacitance and resistance of the circuit. Calculate theresistanceinthelowpass filterofcutofffrequency3kHz

UNIT-IV:INTRODUCTION:	
Unit–IV ResonanceandCRO:Concept ofResonance,Resonancecircuits,parameters ofResonance,Construction andworkingofCROandCRT, MeasurementofTimeperiod,frequency,phaseandamplitude	
PART-A	
S NO	**SHORTQUESTIONS(5MARKS)**
1	Define(i)Seriesresonantcircuit (ii)Parallelresonantcircuit (iii)Resonantfrequency (iv)Resonance
2	Define(i)Q-factorandits importance (ii)Bandwidth (iii)Selectivity
3	DeriveanexpressionforSeriesandParallelresonanceinRLCcircuits
4	Whatisthequalityfactorofresonantcircuit?Howisitrelatedtobandwidthofthecircuit?
5	ExplainQ-factorofseriesandparallelresonantcircuits.
6	ExplainthebandwidthandselectivityofRLC circuits.
7	WriteashortnoteonParallelresonantRLCcircuit
8	WriteashortnoteonSeriesresonantRLCcircuit
9	WriteashortnoteonElectron gun
10	GivetheblockdiagramofC.R.O.
	PART-B
S NO	**LONG QUESTIONS(8M)**
1	Obtain an expression for the resonant frequency and Q - factor for a parallel resonantcircuit.Describethevariouspartsof C. R.O.
2	Explainhowfrequency,amplitudeandphaseofsinusoidalsupplycanbemeasuredusing C.R.O.
3	Explaintheworking ofacathoderaytubewithaneatdiagram.
4	ExplaineachblockintheblockdiagramofC.R.O.Discusstheimportantapplicationsof C.R.O.
5	Describethefunctionsofvariouspartsofcathoderaytube.Derivetheexpressionforelectrostatic deflectionsensitivity.