A Note on the revised II PUC English Question Paper

The revised question paper has retained the pattern of questions employed in the previous question papers without any changes except one-mark questions (from Q1 to Q12) of section I. These twelve questions are converted into MCQs in the interest of the students. The MCQs carry one mark each and are based on the course book. Four questions that were part of language sections V and VII in the previous question papers are shifted to section I but there are no changes either in their pattern or in the marks allotted to them. In the revised question paper,'section I' has sixteen questions. The details of the revised question paper pattern are as follows:

1. Section I contains 12 MCQ questions (Q No. 1 to 12). These questions are framed in the following way:
    - They are based on the lessons from thecourse book.
    - They test knowledge area of the learner/learning (memory/recall).
    - They are mainly focused on below average/average students and fall under 'Very Short Answer' category.
2. Questions on Passive Voice, Expressions/Idioms, Linkers and Jumbled segments are shifted to section I. Now these questions form the Q.13, Q.14, Q.15 and Q.16 of section I. There are no changes in the pattern or marks allotted except that they are shifted to section I.
3. Total number of questions have remained the same at 35.
4. Four-mark questions remain in section II and there no changes either in their pattern or marks allotted to them.
5. Six-mark questions remain in section III. Though the earlier pattern of choosing one question from three questions remains the same, the questions are restricted to specific lessons. In the revised question paper, these questions are selected from lesson 1, 3 and 14 for poetry section and lesson 2,4,7,9 and 13 for prose section.
6. The questions in the language sections remain the same except shifting of four questions as indicated in serial number 2 above.
7. A detailed guidelines for the preparation of the question paper are provided in the following tables:

General Guidelines for the preparation of Question Paper

I. The lesson wise allocation of questions (From the Course Book):

Sl. No	Name of the Lesson	One Mark	Four Marks	Six Marks	Language Component
1	Romeo and Juliet	Yes	Yes	**Yes**	None
2	Too Dear	Yes	Yes	**Yes**	None
3	On Children	Yes	Yes	**Yes**	None
4	Everything I Need to Know…	Yes	Yes	**Yes**	Expressions Linkers
5	A Sunny Morning	Yes	Yes	None	Reported Speech Expressions
6	When You Are Old	Yes	Yes	None	None
7	The Gardener	Yes	Yes	**Yes**	Passive Voice Expressions Linkers
8	To The Foot…	Yes	Yes	None	None
9	I Believe Books…	Yes	Yes	**Yes**	Passive Voice Reported Speech Linkers
10	Heaven, If you …	Yes	Yes	None	None
11	Japan and Brazil..	Yes	Yes	None	None
12	The Voter	Yes	Yes	None	Passive Voice Reported Speech Expressions
13	Where There is…	Yes	Yes	**Yes**	Passive Voice Linkers
14	Water	Yes	Yes	**Yes**	None

II. Unit wise guidelines for framing questions on language section (From the Work Book):

Sl. No	Name of the Lesson	Nature of the Question/Questions
1	Prose Passage	1. Should be of moderate length. 2. Questions set shall be factual and few inferential ones. (The first question shall not be based on the first line of the paragraph – it shall be chosen from other part of the passage – idea is to test comprehension ability of the learner) 3. One question on synonym/antonym shall be

		there.
2	Poem Comprehension	Shall be selected from the poems given in the Work Book.
3	Passive Voice	Shall be selected from the following lessons: 1. The Gardner 2. I Believe …. 3. The Voter 4. Where There is …
4	Reported Speech	Shall be selected from the following lessons: 1. A Sunny Morning 2. I Believe Books… 3. The Voter
5	Dialogue Writing	Shall follow the format used in the Work Book
6	Expressions	Shall be selected from the following lessons: 1. Everything I Need To Know… 2. A Sunny Morning 3. The Gardner 4. The Voter
7	Linkers	Shall be selected from the following lessons: 1. Everything I Need To Know… 2. The Gardner 3. I Believe Books… 4. Where There is a Wheel
8	Note Making	Shall follow the format used in Work Book
9	Letter Writing	Shall the follow the format indicated in the revised Model Question Paper
10	Speech Writing	Shall follow the format indicated in the Work Book
11	Report Writing	Shall follow the format indicated in the Work Book
12	Pronouns and References	The paragraph shall be from the comprehension passage used in the Question Paper
13	Jumbled Segments	Shall follow the pattern indicated in the Work Book

xxx

Blue print for revised II PUC English Model Question Paper with MCQs

Subject Code- 02 **Maximum Marks – 100** **Duration: 3 hours 15 minutes**

Q. No		Sub Q No	Unit No	Name of the Unit	Marks allotted	Knowledge						Comprehension						Expression						Appreciation						Total Marks
						1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	
On Course Book	I	1 to 12	1	Romeo and Juliet	1+4+6	Y															Y		Y							11
			2	Too Dear	1+4	Y			Y																					5
			3	On Children	4																Y									4
			4	Everything I Need .	1+4	Y			Y																					5
			5	A Sunny Morning	1+4										Y															5
	II		6	When You Are Old	1	Y																								1
			7	The Gardener	1+4	Y									Y															5
		17 to 26	8	To The Foot	4				Y																					4
			9	I Believe ….	1+6	Y																							Y	7
			10	Heaven If You…	1	Y																								1
			11	Japan and Brazil	1+4	Y			Y																					5
	III		12	The Voter	1+4	Y			Y																					5
		27	13	Where There is	1+4+6	Y									Y		Y													11
			14	Water	1	Y																								1
On Course Book		13		Passive Voice	03									Y																3
		14		Expressions	02								Y																	2
	I	15		Linkers	04																Y									4
		16		Jumbled	01							Y																		1
	IV	28	28 a to J	Passage	10							10																		10
		29	29 i to iii	Poem	03							03																		03
	V	30 to 31	30	Reported Speech	05											Y														5
			31	Dialogue Writing	04																Y									4
	VI	32 to 34	32	Note making	04										Y															4
			33	Letter Writing	05																	Y								5
			34	Speech Writing	05																	Y								5
				Report Writing	05																	Y								5
	VII	35	35	Pronouns and References	04										Y															4
				Total	125	32						50						37						06						125

II PUC ENGLISH
Revised Model Question Paper 2022-2023

Time: 3 Hours 15 Minutes **Max. Marks: 100**

Instructions:

a. *Follow the prescribed limit while answering the questions.*

b. *Write the correct question number as it appears on the question paper.*

c. *One-mark questions attempted more than once will be awarded zero.*

d. *All questions including Multiple-Choice Questions from section I should be answered in the first three pages only.*

e. *For Multiple-Choice questions, choose the correct answer and rewrite it.*

f. *Answers to question number 28 (a –j) and 29 (i–iii) should be in sequence and at one place.*

I. Answer the following questions by choosing the right option. 12X1= 12

(Answer to this section should be in sequence and written on the first three pages of the answer book.)

1. Romeo compares ——— to a 'rich jewel' in an 'Ethiope's ear.

   a. Montague b. Rosaline

   c. Juliet d. Shakespeare

2. The army in Monaco consisted of ——— number of men in 'Too Dear!'

   a. seventy b. sixty

   c. fifty five d. seventy five

3. In 'When You Are Old' the speaker loved the pilgrim soul of his beloved and also loved her ———— .

   a. wealth b. beauty

   c. happiness d. sorrows

4. There were ——— priests sitting on Gonzalo's usual bench in the park in 'A Sunny Morning'.

a. three b. four

c. five d. two

5. During the Chipko Movement's dramatic actions mentioned by Vandana Shiva, the woman who led resistance against her husband was ————.

a. Carolyn Merchant b. Vandana Shiva's mother

c. Bachni Devi d. Vandana Shiva's sister

6. According to the narrator of 'The Gardener' man would lose his name on ———

a. becoming wealthy b. composing ballads

c. reaching old age d. acquiring friends

7. ————— will never disappear according to Borges.

a. Telephones b. Swords

c. Books d. Ploughs

8. In 'Heaven If You Are Not Here On Earth', the poet creates heaven on ——— .

a. streams b. gardens

c. surf d. Earth

9. The Japanese stores employ _____ to greet customers.

a. singing girls b. dancing girls

c. bowing girls d. clapping girls

10. Marcus Ibe was a ———— before entering politics in 'The Voter'.

a. school teacher b. bicycle repairer

c. village chieftain d. state minister

11. ———— sanctioned fifty mopeds for Arivoli women activists according to P. Sainath.

a. WHO b. UNESCO

c. WTO d. UNICEF

12. ———— is the new name acquired by water as mentioned in the poem 'Water'.

a. Sparkling Water b. Mineral Water

c. Clean Water d. Healthy Water

13. **Complete the following by filling the blanks using the right forms of verb given in the brackets. 3x1=3**

In no time cycling became a way of life in Pudukkottai. It _____ (introduce) as a tool of social change. Mobility, facilitated by cycling _____ (include) as a part of literacy drive. The idea_____ (propose) by Sheela Rani Chunkath, the district collector.

14. **Fill in the blanks by choosing appropriate expressions given in the brackets. 2x1=2**

It was the time of election. The campaign in Umuofia was _____ . All knew that the honourable minister would have a _____.

(in a soup, landslide victory, in full swing)

15. Fill in the blanks with the right linker given in the brackets. 4x1=4

(because, finally, gradually, that)

Rivalry between Tammanna and Basavaiah looked like healthy competition in the beginning. _____ it rose to such a pitch _____ they started competing in buying each acre of land in the village. _____ no land in the village was left for buying. Even then Basavaiah was not happy _____ he had 200 acres less than Tammanna.

16. Rearrange the jumbled segments to form a meaningful sentence. 1x1= 1

Don Gonzalo/ handkerchief / his / used / as a shoe brush

II Answer any eight of the following choosing at least two from the poems in a paragraph of 80-100 words each. 8x4=32

17. Why does Juliet want Romeo to be cut out in little stars?

18. How does the narrator describe the 'Toy Kingdom' in 'Too Dear!'?

19. What attitude should parents have towards their children according to the poem, 'On Children'?

20. Write a note on 'Navdanya Farm' and 'Navdanya Movement'.

21. How does Dona Laura describe her best friend's death to Don Gonzalo in 'A Sunny Morning'?

22. The rivalry between Tammanna and Basavaiah started moving from the visible to the invisible domain. Explain.

23. How does the foot become imprisoned in the shoe in 'To The Foot From Its Child'?

24. Explain how the people of Japan respect each other's privacy according to George Mikes.

25. Why was Roof in a fix while casting his vote in 'The Voter'?

26. Explain the role played by Sheela Rani Chunkath in the cycling movement in 'Where There Is A Wheel'.

III Answer the following in about 200 words. 1x6=6

27. Both Romeo and Juliet employ contrasting images in their expression of appreciation and admiration for each other. Elaborate.

Or

The function of books is irreplaceable. Explain with reference to 'I Believe that Books will Never Disappear'.

Or

P Sainath says, 'A humble vehicle can be a tool for women's empowerment' in 'Where There is a Wheel'. Discuss.

IV. Read the following passage and answer the questions set on it. 10x1=10

The story of the domestic cat's relationship with humans is an interesting tale. The cat has been the object of adoration, reverence, hatred and even persecution by humans throughout time.

Cats were first domesticated by the ancient Egyptians as early as 3000 BC. African wild cats started preying upon the mice and rats that filled the Egyptian grain stores and it didn't take long for the Egyptians to become appreciative of the cats' help in eliminating the rodent population. Killing a cat, even when accidental, was punishable by death. Egyptians shaved away their eyebrows as a symbol of grief when their pet passed away; they would even mummify the cat and bury it in a special cemetery, with supplies of mummified rats for the afterlife. From Egypt, cats spread to other parts of the world. They were great success in the East, where they were again thought to have magical and mystical qualities. Artists in China and Japan celebrated these animals in their art. In Japan, cats are seen as lucky. One of the most known is the beckoning cat, often regarded as good luck charm for both households and businesses.

The cat spread across Europe during the Roman Empire. The Romans kept the animals to be petted and for companionship, as well as for controlling the rat and mice population. Cats were represented mainly as working animals in Roman art, and there is little indication of reverence or mystical powers given to them.

During the Middle Ages, however, cats became an object of superstition and were associated with evil. They were often believed to be endowed with powers of black

magic and suspected of being owned and used by witches. As a result, cats were beaten, killed and driven away from towns and villages. The destruction of cats was so extensive that disease carrying rats flourished, contributing greatly to the wide spread of epidemics and plagues throughout Europe.

Not surprisingly, the Europeans once again began to realize the value of cats in eliminating rodents and cats gradually regained acceptance as household pets.

In 1871, the very first 'cat show' was held in London. The cat association was formed in 1887 in Britain called 'the National Cat Club of Great Britain'.

28.

a. Mention any one of the feelings of a man towards cat.

b. When were cats first domesticated?

c. What did the cats eliminate to win the appreciation of Egyptians?

d. Egyptians shaved away their eye-brows when a cat ……

e. Mention one of the qualities that the East attributed to cats.

f. Who celebrated cats in their art?

g. In which art were cats represented as working animals?

h. Disease carrying rats flourished..... (contributing/contributed) to wide spread epidemics.

i. Name the cat association formed in Britain.

j. Add prefix to the word 'lucky' to form its antonym.

29. Read the following lines and answer the questions set on it. **3x1=3**

Two roads diverged in a yellow wood,

And sorry I could not travel both

And be one traveller, long I stood

And looked down one as far as I could

To where it bent in the undergrowth;

i) What colour is the wood?

ii) The speaker sees before him

a) a dense forest. b) two roads diverging in a forest. c) a crossing.

iii) How many travellers are there?

V.

30. Report the following conversation. **5x1=5**

Don Gonzalo : I want a bench to myself.

Juanito : There is none.

Don Gonzalo : That one over there is mine.

Juanito : There are three priests sitting there.

Don Gonzalo : Rout them out.

31. Complete the following dialogue. **4x1=4**

(Two friends at college)

Mohan : Hi Ramesh. Good morning.

Ramesh : _____ (Responding to greeting)

Mohan : _____ your cell phone for a moment? (Requesting)

Ramesh : Sure, no problem. _____ (Offering)

Mohan : It will only be a minute or two.

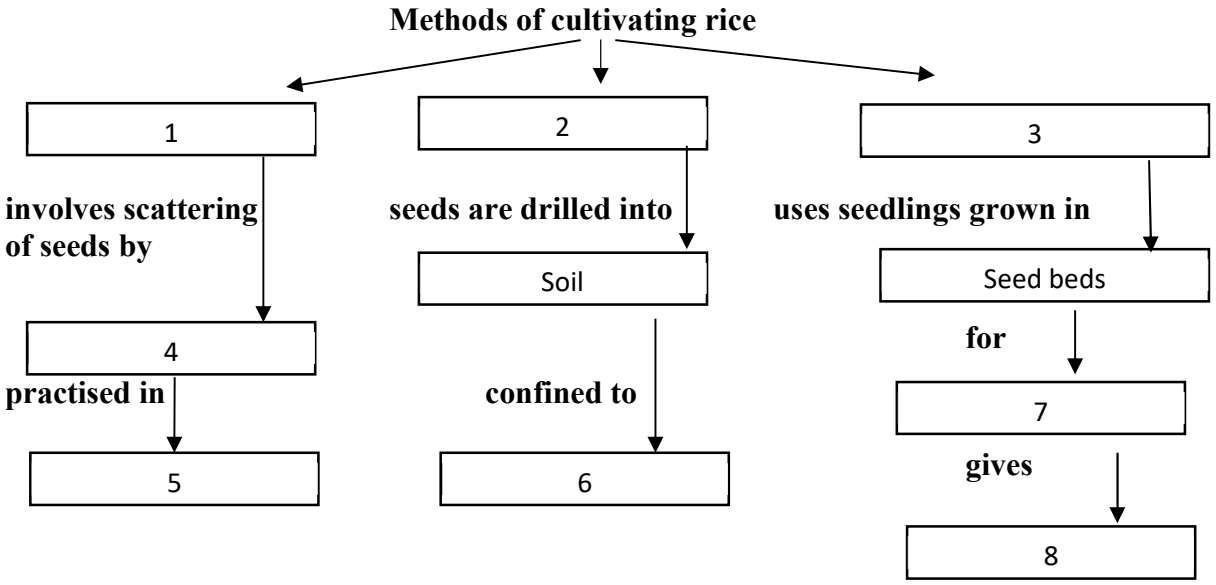
Ramesh : Take your time. No rush.

Mohan : _____ (Expressing gratitude)

VI.

32.Read the following passage and make notes by drawing and filling the boxes given below. **8x½=4**

There are three methods of rice cultivation. They are broadcasting, drilling and transplanting. The broadcasting method involves scattering of seeds by hand and it is practised in less fertile hilly areas. In drilling method, seeds are drilled into the soil. This method is confined to peninsular India. The transplanting method uses seedlings grown in seed beds for four weeks. It requires abundant supply of labour and water but gives higher yields.



33. Write a letter of application in response to the following advertisement which appeared in 'Deccan Herald' dated 3rd September 2022. 5x1=5

Wanted

Office Assistants

Qualification: II PUC pass. Computer Knowledge must.

Apply within fifteen days to: The Manager
Pushpa Industries
Mysore Road, Mandya 571403

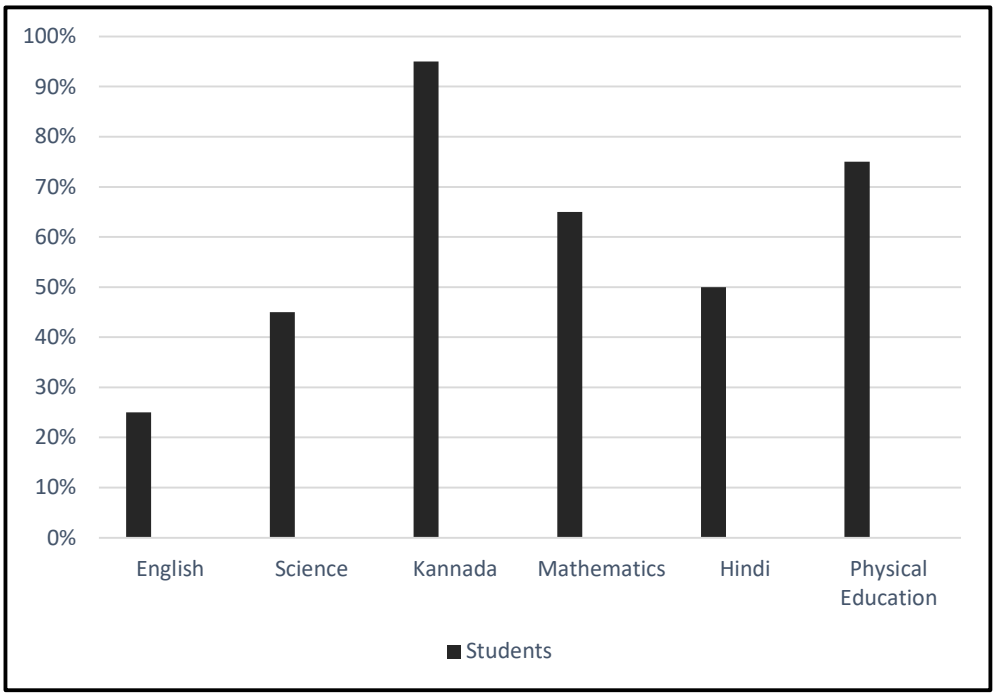
(Write XXX for your name, YYY for your address)

34. Imagine that you are the secretary of your college's 'Eco Club' and you are required to deliver a speech on the importance of ecological balance. Prepare a speech of about one hundred words based on the points mentioned below: 5x1=5

- What is ecological balance – why is ecological balance important?
- Impact of global warming on Earth
- Imbalance resulting in floods and droughts etc.
- Shortage of food grains – rise in diseases like Covid19 etc.
-The need for immediate response to address this issue

Or

Following bar graph represents data regarding X standard students' preference of subjects. Based on the information, write a report in 120 words.



VII

35. What do the underlined words in the following paragraph refer to? 4x1=4

In Egypt, wild cats preyed upon rats that were destroying grains (i) **which** were stored in granaries. In Rome, cats were treated as working animals and not much respect was given to (ii) **them**. The Europeans owned cats for fancy. (iii) **They** started breeding them at home. In Japan, the beckoning cats were seen as lucky since (iv) **their** charm was believed to protect households.

(i) which:..... (ii) them :.....

(iii) They :..... (iv) their :.....

xxx

Pre University Board,Bangalore

II puc Model Question Paper

Samskritam(09)

Max.Time:-$3^{1}/_{4}$ Hrs Max .Marks:-100

PART-A

I. अधो निर्दिष्टानां प्रश्नानाम् उत्तराणि कोष्टकात् उद्धृत्य लिखत। **5*1=5**

1.विश्वस्य मातरः काः? { गावः , नद्यः , सागराः}

2.परदुःखेन के अत्यन्तदुःखिनः भवन्ति? { साधवः , मित्राणि , पक्षिणः}

3.प्रव्राजकः वणिजः गृहं किमर्थमागतवान्? { भोजनार्थम् , भिक्षार्थम् , वाणिज्यार्थम्}

4.शारद्वतः कः? { सचिवः कण्वशिष्यः , राजा }

5.राणाप्रतापस्य अश्वस्य नाम किम्? { चेतकः , चिरञ्जीवी , कपिञ्जलः}

II. मञ्जूषातः सूक्तं पदं चित्वा रिक्तस्थानं पूरयत । **5*1=5**

6.चिरस्य वाच्यं न गतः ---- ।

7.राणाप्रतापः ---- सभाम् आकारितवान् ।

8.---- नवनवीनं परिधानविशेषं धारयति ।

9.भवादृशा गुरवः अतीव ---- ।

10. नवाम्रवापी ---- न पश्येत् ।

प्रतिदिनम् , नरकम्, विरलाः , प्रजापतिः , गण्यानाम्

III. 11. संयोजयत । **5*1=5**

क	ख
पौरवः	प्रेरयतीन्द्रियम्
पुत्थलिका	योद्धारः
विषयः	गङ्गा
बिल्लाः	वस्त्रापणम्
जाह्नवी	दुष्यन्तः

IV. एकवाक्येन संस्कृतभाषया उत्तरं लिखत। **5*1=5**

12.श्वेतकेतोः तनयः कः ?

13. किमर्थं नगरम् आगच्छति ?

14. कर्णस्य गुरुः कः ?

15.अर्थान् कथं चिन्तयेत् ?

16.कृष्णशास्त्रिणाम् माता का ?

V.रेखाङ्कितानि पदानि आश्रित्य प्रश्ननिर्माणं कुरुत।(चतुर्णामेव) **4*1=4**

17.चिन्तातुराणां न सुखं न निद्रा।

18. मेवाड इति स्थलं राजस्थाने प्रसिद्धमासीत् ।

19. शान्तिः धनं न स्वीचकार ।

20. गन्धर्वाधिपतिः हंसः ।

21. विमर्शकेन कृतीनामध्ययनं सम्यक्कर्तव्यम् ।

अथवा

21. अनुचराः प्रव्राजकस्य वचनम् अपालयन्

PART-B

VI.द्वित्रैः वाक्यैः संस्कृतभाषया कन्नडभाषया आङ्ग्लभाषया वा उत्तरं लिखत।(पञ्चानामेव) **5*2=10**

22.भारतवर्षस्य प्रसिद्धपञ्चनदीनां नामानि लिखत।

23.नगरवासिभिः जनैः राक्षसः किम् उक्तः?

24.राजपुत्रः मञ्जूषां प्राप्य किं करोति?

25.कीदृशं कुसुमगन्धम् अजिघ्रम् इति महाश्वेता वदति ?

26.कर्णं प्रति परशुरामोपदेशं लिखत ।

27.नरविग्रहाः देवाः के?

28.शास्त्रिणाम् औदार्यम्।

VII. पाठनाम उल्लिख्य कः कं प्रति अवदत् इति संस्कृतभाषया लिखत ।(चतुर्णामेव) **4*2=8**

29. अद्य प्रभृति मनुष्यभक्षणं परित्यज ।

30.भवतु, अनिर्वणनीयं परकलत्रम्।

31.कुत्रापि गत्वा धनं संग्रहिष्यामि ।

32. पुण्डरीक इति नाम चक्रे ।

33.अहो! भग्नप्रतिज्ञोऽस्मि ।

34. परीक्षार्थम् इतोऽपि समयावकाशः विद्यते।

PART-C

VIII.पाठनाम उल्लिख्य श्लोकानाम् अनुवादं कन्नडभाषया आङ्ग्लभाषया वा कुरुत ।(द्वयोरेव) 2*3=6

35.भारतस्यास्य वर्षस्य नवभेदान्निबोधत ।

समुद्रान्तरिता ज्ञेयास्तेत्वगम्याः परस्परम् ॥

36.तदेतां वीक्ष्य दुःखं मे जातं भक्तो हि मे भवान् ।

तेनैवमुक्तवानस्मि त्यक्त्वा मौनं भवत्कृते ॥

37. धन्योऽस्मि गमनात्पूर्वमीदृशी सम्पदागता ।

विना तु गुरुशुश्रूषां नान्यद्भाव्यं परं मम ॥

38. मनसा चिन्तितं कार्यं वाचा नैव प्रकाशयेत्।

मन्त्रवत् रक्षयेत् गूढं कार्ये चापि नियोजयेत्॥

IX.दशवाक्यैः संस्कृतभाषया कन्नडभषया आङ्ग्लभाषया वा उत्तरं लिखत (पञ्चानामेव) **5*5=25**

39. पुराणेषु भारतं कथं वर्णितम?

40.विक्रमादित्यस्य प्रभावेण राक्षसः कथं परिवर्तितः?

41." निर्विमर्शा हि भीरवः" इति शीर्षिकां समर्थयत ।

42. दीर्घापाङ्गप्रसङ्गः ।

43. महाराणाप्रतापेन अनुभूता कष्टपरम्परा ।

44. पुण्डरीकस्य जन्मवृत्तान्तः ।

45. शान्तिदर्शनात् तरुणस्य चिन्तासन्ततिः।

46. शास्त्रिणां शिष्यवात्सल्यम्।

PART-D

X.यथानिर्देशं कुरुत । (चतुर्णामेव) **4*3=12**

47.सन्धिं विभजत /योजयत (त्रयाणामेव)

भरणाच्च , एकैकम् , दुःखेन+अहम् , कश्चित्+आसीत् पश्यत+एनम्

48.विग्रहवाक्यं/समस्तपदं लिखत(त्रयाणामेव)

वस्त्रापणः , कामक्रोधौ , नराः एव विग्रहाः ,राष्ट्रस्य कविः ,ज्येष्ठश्चासौ पुत्रश्च

49.लिङ्गविभक्तिवचनानि लिखत(द्वयोरेव)

वचनात् , पुत्थलिका ,नगरी , पौरवैः

50.लकारपुरुषवचनानि लिखत(द्वयारेव)

वदन्ति , अब्रवीत् ,मन्यते , भवन्तु

51.पदपरिचयं कुरुत(त्रयाणामेव)

पतन् , चिन्तितम् , विदित्वा ,निरीक्ष्य , निर्गतः

52.प्रयोगं परिवर्तयत

अ) नरैः कर्माणि क्रियन्ते । **अथवा** आ) राणाप्रतापः प्रतिज्ञां स्वीकृतवान्।

53.अलङ्कारं सलक्षणं निर्दिशत ।

अ) चिच्छेद पापस्य कपिः निग्रहज्ञ इव क्रुधा ।

अथवा

आ)अस्याः आननारविन्दे अपूर्वाकर्षणमासीत् ।

54.**कन्नडभाषया–आङ्ग्लभाषया वा अनुवदत ।** **1*5=5**

पुरा केरले शिवगुरु–आर्याम्बादम्पत्योः एकः पुत्रः अजायत । भगवतः शिवस्य अनुग्रहात् जातस्य तस्य शङ्कर इति नाम कृतम्। सः बाल्ये एव वेदाध्ययनं समाप्य संन्यासं स्व्यकरोत् । मातुः आज्ञया नर्मदातीरं गत्वा गुरोः सकाशे शास्त्राणि अधीतवान् । अनन्तरं भारतस्य चतसृषु दिक्षु मठं संस्थाप्य सनातनधर्मस्य गरिमाणम् अवर्धयत। स एव श्री शंकरभगवत्पादः।

55. **संस्कृतभाषया अनुवदत ।** **1*5=5**

ಒಮ್ಮೆ ರಾಜರ್ಷಿಯಾದ ಜನಕಮಹಾರಾಜನ ಬಳಿ ಋಷಿಗಳು ಬಂದು ಪ್ರಶ್ನಿಸಿದರು.-ಹೇ ರಾಜನ್, ಪ್ರಜಾಪಾಲನೆ ಹಾಗೂ ಯೋಗಸಾಧನೆಗಳನ್ನು ಏಕಕಾಲದಲ್ಲಿ ಹೇಗೆ ಮಾಡುತ್ತೀಯೆ? ಎಂದು.ಆಗ ಜನಕನು ಎಲೈ ಋಷಿವರ್ಯರೇ,ನೀವು ಸ್ವತಃ ತಿಳಿದಿದ್ದರೂ,ನನ್ನನ್ನು ಪರೀಕ್ಷಿಸಲು ಪ್ರಶ್ನಿಸುತ್ತಿರುವಿರಿ ಎಂದು ಭಾವಿಸುತ್ತೇನೆ.ಈ ಪ್ರಪಂಚದಲ್ಲಿ ಎಲ್ಲವೂ ಪರಮೇಶ್ವರನ ಅನುಗ್ರಹದಿಂದ ನಡೆಯುತ್ತದೆ.ನನ್ನದು ಏನೂ ಇಲ್ಲ ಎಂಬ ಭಾವನೆಯಿಂದ ಕರ್ತವ್ಯವನ್ನು ನಿರ್ವಹಿಸುತ್ತೇನೆ.ಹಾಗಾಗಿ ಇದು ಸಾಧ್ಯ ಎಂದು ಉತ್ತರಿಸಿದನು.

Once the sages went to the king Janaka and asked him-'oh king,how can you perform both protection of the subjects and accomplishing Yoga simultaneously?'.The king replied –'Oh great sages,I think, you are questioning me ,though you yourselves know it. Everything happens in this world by the grace of Almighty. I dishcharge my duties with the feeling that nothing is mine. So this is possible.

56.(अ) **इमं परिच्छेदं पठित्वा प्रश्नानाम् उत्तराणि लिखत ।** **5*1=5**

भारतीययुवकाः बालगङ्गाधरेण प्रेरिताः आसन् । सः स्वातन्त्र्यं मम जन्मसिद्धः अधिकारः इति उद्घोषितवान्। तस्य उद्घोषणेन प्रेरिताः युवकाः स्वसुखानि धिक्कृत्य युद्धे भागं गृहीतवन्तः। तेषु भगत्सिंहः प्रसिद्धः आसीत्। आत्माहुतिसमये सः प्रायशः विंशतिवर्षीयः स्यात्। तेन सह राजगुरुः सुखदेवः च अपि प्राणान् अत्यजताम् । अनेन प्रकारेण सहस्रयुवकाः भारतमातुः स्वातन्त्र्यार्थं स्वजीवं समर्पितवन्तः। अन्ते भारतमातुः चरणारविन्दयोः स्वजीवपुष्पम् अर्पितवन्तः।

1. भारतीययुवकाः केन प्रेरिताः आसन् ?
2. सः किम् उद्घोषितवान्?
3. तेषु युवकेषु कः प्रसिद्धः आसीत् ?
4. तेन सह कौ प्राणान् अत्यजताम्?
5. सहस्रयुवकाः किमर्थं स्वजीवं समर्पितवन्तः?

अथवा

(आ) दिनद्वयस्य विरामं संप्रार्थ्य प्राचार्यं प्रति विरामपत्रमेकं लिखत ।

Design of Question Paper

II PUC PHYSICS (33)

Time: 3 Hours 15 Minutes (of which 15 minutes for reading the question paper)

Max. Marks: 70

The weightage of the distribution of marks over different dimensions of the question paper is as follows:

A. Weightage Objectives:

Objective	Weightage	Marks
Knowledge	40%	46/115
Understanding	30%	34/115
Application	20%	23/115
Skill	10%	12/115

B. Weightage to content/ subject units:

Unit No.	Chapter No.	Topic	No. of Hours	Marks
I	**1**	**Electric Charges and Fields**	**10**	**10**
II	**2**	**Electric Potential and Capacitance**	**9**	**9**
III	**3**	**Current Electricity**	**15**	**14**
IV	**4**	**Moving Charges and Magnetism**	**12**	**11**
V	**5**	**Magnetism and Matter**	**8**	**7**
	6	**Electromagnetic Induction**	**7**	**7**
VI	**7**	**Alternating Current**	**8**	**8**
	8	**Electromagnetic Waves**	**3**	**3**
VII	**9**	**Ray Optics and Optical Instruments**	**10**	**9**
VIII	**10**	**Wave Optics**	**10**	**9**
IX	**11**	**Dual Nature of Radiation and Matter**	**6**	**6**
	12	**Atoms**	**5**	**5**
X	**13**	**Nuclei**	**7**	**7**
	14	**Semiconductor Devices & Electronics**	**10**	**10**
TOTAL			**120**	**115**

C. Weightage to form of questions:

Part	Question Main	Type of questions	Marks	Number of questions to be set	Number of questions to be answered
A	I	Multiple Choice Questions (MCQ)	1	15	15
	II	Fill in the blank type (FIB)	1	5	5
B	III	Short Answer (SA1)	2	9	5
C	IV	Short Answer (SA2)	3	9	5
D	V	Long Answer (LA)	5	6	3
	VI	Numerical Problems (NP)	5	4	2
TOTAL				**48**	**35**

Note:

1. Questions in I Main (MCQ) should be knowledge based only and should not involve numerical calculations.
2. Questions in II Main (FIB) should be simple, direct and should not involve numerical calculations.

D. Weightage to level of difficulty:

Level	Weightage	Marks
Easy	40%	46/115
Average	40%	46/115
Difficult	20%	23/115

General instructions

1. This blueprint must be used for setting question papers for all future examinations.
2. Questions should be clear, unambiguous, understandable and free from grammatical errors.
3. Questions which are based on same concept, law, fact etc. and which generate the same answer should not be repeated under different forms (MCQ, FIB, VSA, SA, LA and NP).

Blue Print for the Physics Question Paper
II PUC PHYSICS (33)

Unit	Chapter	Topic	Teaching Hours	Marks allotted	1 Mark (MCQ)	1 Mark (FIB)	2 Marks (SA1)	3 Marks (SA2)	5 Marks (LA)	5 Marks (NP)
I	1	Electric Charges and Fields	10	10	✓	✓		✓	✓	
II	2	Electric Potential and Capacitance	9	9	✓ ✓		✓			✓
III	3	Current Electricity	15	14	✓			✓	✓	✓
IV	4	Moving Charges and Magnetism	12	11	✓		✓	✓	✓	
V	5	Magnetism and Matter	8	7	✓	✓	✓	✓		
	6	Electromagnetic Induction	7	7	✓ ✓		✓	✓		
VI	7	Alternating Current	8	8	✓		✓			✓
	8	Electromagnetic Waves	3	3	✓		✓			
VII	9	Ray Optics and Optical Instruments	10	9	✓			✓	✓	
VIII	10	Wave Optics	10	9	✓	✓	✓			✓
IX	11	Dual Nature of Radiation and Matter	6	6	✓				✓	
	12	Atoms	5	5			✓	✓		
X	13	Nuclei	7	7	✓	✓	✓	✓		
	14	Semiconductor Devices & Electronics	10	10	✓	✓		✓	✓	
TOTAL = 115 Marks			120	115	15	05	18	27	30	20

Instructions:

1. This blueprint must be used for setting question papers for all future examinations.
2. 5 Mark questions from chapters ***Dual Nature of Radiation and Matter*** and ***Semiconductor Electronics*** must be split questions of the form (1 + 2 + 2) or (1 + 1 + 1 + 2) or (2 + 3).
3. 3 Mark Question from the chapter ***Nuclei*** must be a numerical problem.

MODEL QUESTION PAPER FOR 2022-23

II PUC - PHYSICS (33)

Time: 3 hours 15 min. **Max Marks:** 70

General Instructions:

1. *All parts are compulsory.*
2. *Part – A questions have to be answered in the first two pages of the answer-booklet. For Part – A questions, first written-answer will be considered for awarding marks.*
3. *Answers without relevant diagram / figure / circuit wherever necessary will not carry any marks.*
4. *Direct answers to the numerical problems without detailed solutions will not carry any marks.*

PART – A

I. Pick the correct option among the four given options for ALL of the following questions: 15 × 1 = 15

1. For large distances from a short dipole, the electric field due to it depends on the distance from it as:

(A) $\frac{1}{(\text{distance})^2}$ (B) $\frac{1}{(\text{distance})^3}$

(C) $(\text{distance})^3$ (D) $(\text{distance})^2$

2. Which one of the following is the unit of capacitance?

(A) farad (F) (B) coulomb (C)

(C) volt (V) (D) tesla (T)

3. An example for polar molecule is:

(A) Oxygen (O_2) molecule (B) Nitrogen (N_2) molecule

(C) Hydrogen (H_2) molecule (D) Water (H_2O) molecule

4. The resistance of a carbon resistor is $12 \times 10^5 \pm 10\%\ \Omega$. The colour of the first band of the resistor is:

(A) Green (B) Black

(C) Brown (D) Silver

5. Force on a charged particle moving in a magnetic field is maximum when the angle between the velocity of the charge and the magnetic field is:

(A) 180° (B) 90°

(C) 45° (D) 0°

6. Identify the wrong statement among the following options about *magnetic field lines*:

(A) They form closed loops.

(B) The tangent drawn to the magnetic field line at any point gives the direction of magnetic field at that point.

(C) They can intersect each other.

(D) Outside a magnet, they go from north pole to the south pole.

7. The law which gives the polarity of induced emf in electromagnetic induction is:

(A) Gauss's law in magnetism (B) Ampere's circuital law

(C) Faraday's law (D) Lenz's law

8. The principle behind the working of AC generator is:

(A) Electromagnetic induction (B) Eddy currents

(C) Hysteresis (D) Torque on a current loop

9. In the case of alternating voltage applied to a resistor:

(A) the current leads the voltage by a phase angle of $\pi/2$

(B) the current lags behind the voltage by a phase angle of $\pi/2$

(C) the current and the voltage are in phase

(D) the current leads the voltage by a phase angle of $\pi/4$

10. Displacement current arises due to:

(A) time varying electric flux (B) constant electric flux

(C) change in magnetic flux (D) constant magnetic flux

11. In case of *total internal reflection*:

(A) light ray must be travelling from rarer medium to denser medium.

(B) light ray must be travelling from denser medium to rarer medium.

(C) the angle of incidence must be less than the critical angle.

(D) angle of refraction is 0° when the angle of incidence is equal to critical angle.

12. The phenomena of bending of light at the corners of an obstacle is called:

(A) refraction (B) polarization

(C) interference (D) diffraction

13. Davisson – Germer experiment proved:

(A) wave nature of electrons (B) particle nature of electrons

(C) wave nature of light (D) particle nature of light

14. Among the following, which set of nuclei are isotopes?

(A) ${}^{14}_{6}C$ and ${}^{14}_{7}N$ (B) ${}^{3}_{2}He$ and ${}^{3}_{1}H$

(C) ${}^{235}_{92}U$ and ${}^{238}_{92}U$ (D) ${}^{28}_{14}Si$ and ${}^{73}_{32}Ge$

15. For an AND gate, which set of inputs A and B give a high output Y = 1?

(A) A = 0, B = 0 (B) A = 0, B = 1

(C) A = 1, B = 0 (D) A = 1, B = 1

II. Fill in the blanks by choosing appropriate answer given in the brackets for <u>ALL</u> the following questions: **<u>5 × 1 = 5</u>**

(*Wavelength, Zener diodes, Coulomb's law, Activity, Temperature*)

16. Force between two point charges in vacuum is given by _____.

17. The magnetic susceptibility of a paramagnetic substance is inversely proportional to its _____.

18. Resolving power of a microscope can be increased by decreasing the _____ used.

19. SI unit of _____ is becquerel (Bq).

20. _____ are used as voltage regulators.

PART – B

III. Answer any FIVE of the following questions: **5 × 2 = 10**

21. What are the factors on which capacitance of a parallel plate capacitor depends?

22. Draw a neat labelled diagram of cyclotron.

23. State and explain Gauss's law in magnetism.

24. What are eddy currents? Mention one of its uses.

25. List any two sources of energy loss in a transformer.

26. Mention any two uses of microwaves.

27. What is a wavefront? What is the shape of wavefront from a point source?

28. Give de Broglie's explanation of Bohr's angular momentum quantisation postulate.

29. Write any two properties of nuclear forces.

PART – C

IV. Answer any FIVE of the following questions: **5 × 3 = 15**

30. Mention three basic properties of charges.

31. Derive the expression for drift velocity in terms of electric field and relaxation time.

32. With a circuit diagram, explain how a galvanometer can be converted into a voltmeter?

33. Define the terms (i) Declination (ii) inclination and (iii) horizontal component of earth's magnetic field.

34. Derive an expression for motional emf induced in a rod moving in a magnetic field.

35. Draw ray diagram for the formation of image by a compound microscope. Write the expression for magnification produced by the microscope for image formed at infinity.

36. Arrive at the expression for radius of n^{th} orbit of electron in a hydrogen atom.

37. Calculate the mass defect and binding energy of ${}^{14}_{7}N$. *Given*: The rest masses of nitrogen nucleus, proton and neutron are 14.00307 u, 1.00783 u and 1.00867 u respectively.

38. Write any three differences between *p* – type and *n* – type semiconductors.

PART – D

V. Answer any THREE of the following questions: **3 × 5 = 15**

39. Derive the expression for the electric field at a point outside a uniformly charged spherical shell. What is the value of the electric field inside the shell?

40. Obtain the condition for balance of a Wheatstone's network using Kirchhoff's laws.

41. Arrive at the expression for the force per unit length between two infinitely long straight parallel current carrying conductors. Hence define ampere.

42. Derive Lens maker's formula.

43. (i) Define threshold frequency for photoelectric emission. (1)

(ii) Write any two experimental observations of photoelectric effect. (2)

(iii) Write Einstein's photoelectric equation and explain the terms. (2)

44. (i) What is rectification? (1)

(ii) Write the circuit diagram and input – output waveforms for a full wave rectifier. (2)

(iii) Explain the working of a full wave rectifier. (2)

VI. Answer any <u>TWO</u> of the following questions: **<u>2 × 5 = 10</u>**

45. ABCD is a square of side 2 m. Point charges of 50 μC, 100 μC and – 50 μC are placed at corners A, B, C respectively. Calculate the work done in transferring a charge of 0.5 nC from D to the point of intersection of diagonals.

46. Two resistors of resistance 12 Ω and 6 Ω are connected in parallel with a 12 V, 1 Ω cell.

(a) Calculate the equivalent resistance of the combination of resistors.

(b) Obtain the current through the cell.

(c) Find the terminal potential difference across the cell.

47. A series LCR ac circuit has a pure inductor of inductance 5.0 H, a capacitor of capacitance 20 μF and a resistor of resistance 40 Ω. Find

(a) the frequency of the alternating voltage that drives the circuit into resonance.

(b) Sharpness of resonance and

(c) Bandwidth of resonance.

48. In Young's double slit experiment, the distance of the screen from the double-slit is 2 m. When light of wavelength 550 nm is incident on the double-slit arrangement, fringes of width 2 mm are obtained on the screen. Determine the distance of separation between the slits. Also find the fringe width when the source of light is replaced by a source of light of wavelength 440 nm.

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II PUC CHEMISTRY (34)

BLUE PRINT

Time: 3 Hrs.15Min **Max. Marks: 70 marks**

Group	Unit	Name of Chapters	Teaching Hours	Marks	Part-A 20 x 1 Mark		Part B 8 x 2 Mark	Part C 8 x 3 Mark	Part D 11 x 5 Mark		Total
					I	II	III	IV	V	VI	
Group - I Physical	1	The Solid State	8	8	√		√		√		8
	2	Solution	9	8	√√	√			√		8
	3	Electrochemistry	9	8	√		√		√		8
	4	Chemical kinetics	9	9	√	√	√		√		9
	5	Surface Chemistry	6	6	√				√		6
		Total of Group - I	**41**	**39**							**39**
Group-II Inorganic	6	General principles and processes of isolation of elements	5	4	√			√			4
	7	The p-Block elements	11	11	√	√		√√			11
	8	The d and f-block elements	9	9	√		√	√√			9
	9	Coordination compounds	7	7	√			√√			7
		Total of Group - II	**32**	**31**							**31**
Group - III Organic	10	Haloalkanes and haloarenes	7	7	√	√				√	7
	11	Alcohols, phenols and ethers	8	8	√		√			√	8
	12	Aldehydes, ketones and carboxylic acids	9	8	√		√			√	8
	13	Amines	6	6	√					√	6
	14	Biomolecules	7	6	√					√	6
	15	Polymers	5	5						√	5
	16	Chemistry in everyday life	5	5		√	√√				5
		Total of Group - III	**47**	**45**							**45**
		Total	**120**	**115**	**15**	**05**	**16**	**24**	**25**	**30**	**115**

General Guide lines:

(1) Questions should not be ambiguous and answers should be available in prescribed text book.
(2) No application type of questions in Part A. All questions should be knowledge based and moderate.
(3) In Part B, Part C and Part D, 40% questions knowledge based, 40% questions moderate and 20% questions skill and application type(difficult level).
(4) Questions should be selected from respective chapters for particular question numbers as per blue print.
(5) Part A (I): MCQ questions from units 1 to 14.
(6) Part A (II): Fill in the blank's questions from Unit 1, 4, 7, 10 and 15. In p-block elements (Unit 7) question numbers (8) and (18) are suggested to take from noble gases.
(7) For Part B, C and D, Previous years guidelines (before 2019) are applicable.

Government of Karnataka

Department of pre university education

Model question paper

CHEMISTRY (34)

TIME: 3hours 15minutes **MAX.MARKS:70**

Instructions: i. The question paper has four parts. All the four parts are compulsory
PART -A carries 20 marks, each question carries one mark.
PART- B carries 8 marks. Each question carries two marks
PART -C carries 12 marks. Each question carries three marks
PART-D carries 30 marks. Each question carries five marks
ii. Write balanced chemical equations and draw diagrams wherever necessary
Use log table and simple calculators if necessary (use of scientific calculator is not allowed)

PART-A

I. Select the correct option from the given choices. **1x15 = 15**

1. Due to Frenkel defect, the density of the ionic solids
   a) Increases b) Decreases
   c) does not change d) Changes to a small extent
2. In which mode of expression the concentration of solution remains independent of temperature
   a) Volume percent b) Molarity
   c) Molality d) Formality
3. Which of the following is not colligative property
   a) Optical activity b) Osmotic pressure
   c) Depression in freezing point d) Elevation of boiling point
4. During the electrolysis of molten sodium chloride, the reaction occurs at anode is
   a) Chloride ions are oxidized b) Chloride ions are reduced
   c) Sodium ions are oxidized d) Sodium ions are reduced
5. The unit of rate constant for zero order reaction
   a) Ls^{-1} b) L mol s^{-1}
   c) mol L^{-1} s^{-1} d) mol s^{-1}
6. In the process of adsorption
   a) $\Delta H = 0$, $\Delta S = 0$ b) ΔH = +ve, ΔS = +ve
   c) ΔH = -ve, ΔS = -ve d) ΔH = +ve, ΔS = -ve

7. Pair of metals purified by van Arkel method is

a) Ni and Fe b) Ga and In

c) Zr and Ti d) Ag and Au

8. The noble gas which does not occur in atmosphere is

a) Radon b) Helium c) Xenon d) Krypton

9. The element which does not show variable oxidation state is

a) Sc b) V c) Fe d) Hg

10. An example of ambidentate ligand is

a) NH_3 b) H_2O c) CN^- d) Cl^-

11. Primary alkyl halides prefer to undergo

a) $S_N1$reaction b) S_N2 reaction c) Addition reaction d) Condensation reaction

12. When Phenol is treated with excess of bromine water, it gives

a) m-bromophenol b) o-and p-bromophenols

c) 2,4-dibromophenol d) 2,4,6-tribromophenol

13. In Clemmensen reduction, carbonyl compound is treated with……to form corresponding hydrocarbon.

a) Zinc amalgam + HCl b) Sodium amalgam + HCl

c) Zinc amalgam + HNO_3 d) Sodium amalgam + HNO_3

14. Amongst the following the strongest base in aqueous medium is

a) CH_3NH_2 b) $(CH_3)_3N$ c) $(CH_3)_2NH$ d) $C_6H_5NH_2$

15. Starch is a polymer of

a) α-D (+) Glucose b) β-D (+) Glucose c) α-D (+) Fructose d) β-D (+) Fructose

II. Fill in the blanks by choosing the appropriate word from those given in the brackets:

[phosgene, terpineol, camphor, exponentially, PtF_6] 1x5=5

16. _____ in nitrogen gas is the example for gaseous solution

17. In a first order reaction the concentration of the reaction decreases ____ with time.

18. The first noble gas compound was prepared by reacting Xe with ____.

19. The poisonous gas ____ is formed when chloroform is exposed to air and light.

20. The main constituents of Dettol are chloroxylenol and _____

PART-B

III.Answer any four of the following. Each question carries two marks. 4 x 2=8

21. Give any two differences between crystalline and amorphous solids.
22. The conductivity of a 0.20M solution of KCl at 298 K is 0.0248 Scm^{-1}. Calculate its Molar Conductivity.
23. Define molecularity. For a zero-order reaction will the molecularity be equal to zero?
24. What is lanthanoid contraction? Mention any one of its consequences.
25. i) What is the composition of Lucas reagent?
    ii) What is the inference observed when 3° alcohol is treated with Lucas reagent?
26. Explain Hell Volhard Zelensky reaction.
27. What are food preservatives? Give an example.
28. Explain saponification with an example.

PART –C

IV. Answer any four of the following. Each question carries three marks 4 x 3 = 12

29. Write the reactions involved in the process of leaching of bauxite ore to prepare pure alumina. (3)
30. Write the optimum conditions to get ammonia by Haber'sprocess? (3)
31. a) Give an example for each i) basic oxide ii) neutral oxide. (2+1)
    b) What happens when SO_2 is passed through an aqueous solution of Fe (III) salt?
32. a) Explain the bleaching action of chlorine water.
    b) Name the halogen which forms only one oxoacid. (2+1)
33. a) Calculate the 'spin only' magnetic moment of $M^{3+}(aq)$ ion (Z =27).
    b) Sc^{3+} is colorless. Give reason. (2+1)
34. How is pure potassium dichromate manufactured by chromite ore? (3)
35. On the basis of valence bond theory, explain hybridization, structure and magnetic property of the complex $[Ni(Cl)_4]^{2-}$. (3)
36. a) Draw the energy level diagram to show splitting of degenerated orbitals in an octahedral Crystal field.
    b) Write the type of isomerism exhibited by coordinate complexes having ambidentate ligands. (2+1)

PART-D

V. Answer any three of the following. Each question carries five marks. 3 x 5 = 15

37. a) Calculate the packing efficiency in simple cubic lattice. (3)

b) Calcium metal crystallizes in a face centered cubic lattice with edge length of 0.556nm. Calculate the density of the metal. (Atomic mass of calcium=40g/mol and Avogadro Number = 6.022 x 1023 mol^{-1}) (2)

38. a) Vapour pressure of benzene is 200 mm of Hg. A solution having 2g of non volatile solute in 78 g of benzene has a vapour pressure of 195 mm of Hg. Calculate the molar mass of the solute. (Molar mass of benzene is 78 $gmol^{-1}$) (3)

b) Write two differences between ideal and non ideal solutions with respect to

i) intermolecular interactions between the components and

ii) Change in enthalpy. (2)

39. a) For the given equation

$Cu(s) + 2Ag^{+}(aq) \rightarrow Cu^{2+}(aq) + 2Ag(s)$

($E^{0}_{Cu^{2+}/Cu} = +0.34V$, $E^{0}_{Ag^{+}/Ag} = +0.80V$). (3)

i) Calculate the standard cell potential.

ii) Write the cell representation for the above equation.

b) Name the cathode in lead storage battery and write the discharge reaction taking place at cathode. (2)

40. a) Derive the integrated rate equation for the rate constant of a first order reaction. (3)

b) What are the two criteria for effective collision according to collision theory? (2)

41. a) Give any two differences between lyophilic and lyophobic colloids. (2)

b) Explain heterogeneous catalysis with a suitable example. (2)

c) Why do colloidal solutions exhibit Tyndall effect? (1)

VI. Answer any three of the following. each question carries five marks 3 x 5= 15

42. a) Discuss S_N2 reaction mechanism by taking methyl chloride as example. (2)

b) Name the organic compounds formed when ethyl bromide reacts with the following reagents: i) alcoholic KNO_2 ii) alcoholic AgCN (2)

c) What is an asymmetric carbon? (1)

43. a) How does ethyl alcohol reacts with Cu at 573 K. write the equation (2)

b) Explain Kolbe's reaction. (2)

c) Write the IUPAC name of ethyl methyl ether (1)

44. a) Explain the mechanism of addition of HCN to carbonyl compound. (2)

b) Write the chemical equation of benzaldehyde with acetophenone in the presence of dilute alkali at 293K. Give the name of major product obtained in this reaction. (2)

c) The pK_a value of 4-methoxy benzoic acid is greater than 4-nitrobenzoic acid. Which among them is stronger acid? (1)

45. a) Explain carbylamine reaction with suitable example. (2)

b) Write chemical equation for the conversion of Nitro-benzene to aniline (2)

c) Why primary amines have higher boiling point than tertiary amines? (1)

46. a) Write the Haworth structure of Lactose (2)

b) Name the nucleic acid which is responsible for genetic information. (1)

c) Name the vitamin responsible for coagulation of blood (1)

d) Give an example for naturally occurring optically inactive amino acid. (1)

47. a) How is Buna-S prepared? Write the equation. (2)

b) What are homopolymers? Give an example. (2)

c) Write the IUPAC name of the isoprene. (1)

BLUE PRINT FOR THE YEAR 2022-23

II PUC MATHEMATICS (35)

TIME: 3 hours 15 minute **Max. Mark: 100**

Chapter	CONTENT	Number Teaching hours	PART A		PART B	PART C	PART D	PART E		Total marks
			1 mark MCQ	1 mark FB/ VSA	2 mark VSA	3 mark SA	5 Mark LA	6 mark LA	4 mark LA	
1	RELATIONS AND FUNCTIONS	11	1	1	1	1	1			12
2	INVERSE TRIGONOMETRIC FUNCTIONS	8	1		2	1				8
3	MATRICES	8	1			1	1			9
4	DETERMINANTS	13	1	1	1		1		1	13
5	CONTINUITY AND DIFFERENTIABILITY	19	1	1	2	2	1		1	21
6	APPLICATION OF DAERIVATIVES	11		1	1	1	1			11
7	INTEGRALS	21	1	1	2	2	1	1		23
8	APPLICATION OF INTEGRALS	8				1	1			8
9	DIFFERENTIAL EQUATIONS	9		1	1	1	1			11
10	VECTOR ALGEBRA	11	1	1	2	2				12
11	THREE DIMENSIONAL GEOMETRY	12	1	1	1	1	1			12
12	LINEAR PROGRAMMING	7	1	1				1		8
13	PROBABILITY	12	1	1	1	1	1			12
	TOTAL	**150**	**10**	**10**	**14**	**14**	**10**	**2**	**2**	**160**

Model Question Paper

II P.U.C MATHEMATICS (35)

Time : 3 hours 15 minute **Max. Marks : 100**

Instructions :

1) *The question paper has five parts namely A, B, C, D and E. Answer all the parts.*

2) *Part A has 10 Multiple choice questions, 5 Fill in the blanks and 5 Very Short Answer questions of 1 mark each.*

3) *Part A should be answered continuously at one or two pages of Answer sheet and Only first answer is considered for the marks in subsection I and II of Part A.*

4) *Use the graph sheet for question on linear programming in PART E.*

PART A

I. Answer ALL the Multiple Choice Questions **10 ×1 = 10**

1. The identity element for the binary operation $*$ if a $*$ b = $\frac{ab}{4}$,$\forall$ a, b $\in$Q

(A) 0 (B) 4 (C) 1 (D) not exist.

2. If $\cot^{-1} x = y$, then

(A) $0 \leq y \leq \pi$ (B) $0 < y < \pi$ (C) $-\frac{\pi}{2} \leq y \leq \frac{\pi}{2}$ (D) $-\frac{\pi}{2} < y < \frac{\pi}{2}$

3. For 2×2 matrix $A = \left[a_{ij}\right]$ whose elements are given by $a_{ij} = \frac{i}{j}$ then A is equal to

A) $\begin{bmatrix} 2 & 3 \\ \frac{1}{2} & \frac{9}{2} \end{bmatrix}$ B) $\begin{bmatrix} \frac{1}{2} & 1 \\ 2 & \frac{1}{2} \end{bmatrix}$ C) $\begin{bmatrix} 1 & \frac{1}{2} \\ 2 & 1 \end{bmatrix}$ D) $\begin{bmatrix} 1 & 2 \\ 2 & 1 \end{bmatrix}$

4. If $\begin{vmatrix} 3 & x \\ x & 1 \end{vmatrix} = \begin{vmatrix} 3 & 2 \\ 4 & 1 \end{vmatrix}$ then the value of x is equal to

(A) 2 (B) 4 (C) 8 (D)$\pm 2\sqrt{2}$.

5. Left hand derivative of $f(x) = |\ x\ |$ at x = 0 is.

(A) 1 (B) -1 (C) 0 (D)does not exist.

6. $\int e^x \left(\frac{1}{x} - \frac{1}{x^2}\right) dx =$

(A) $e^x + c$ (B) $\frac{e^x}{x} + c$ (C) $\frac{e^x}{x^2} + c$ (D) $\frac{-e^x}{x} + c$

7. The *projection* of the vector $\overrightarrow{AB}$ on the directed line l, if angle $\theta = \pi$ will be.

(A) $Zero$ vector. (B) $\overrightarrow{AB}$ (C) $\overrightarrow{BA}$ (D) $Unit$ vector.

8. The equation of xy- plane is

(A) $x = 0$ (B) $y = 0$ (C) $x = 0$ and $y = 0$ (D) $z = 0$

9. The corner points of the feasible region determined by the following system of linear inequalities: $2x + y \leq 10$, $x + 3y \leq 15$, $x, y \geq 0$ are (0, 0), (5, 0), (3, 4) and (0, 5). Let $Z = ax + by$, where $a, b > 0$. Condition on a and b so that the maximum of Z occurs at both (3, 4) and (0, 5) is

(A) $a = b$ (B) $a = 2b$ (C) $a = 3b$ (D) $b = 3a$

10. If P(A) = $\frac{1}{2}$, P (B) = 0, then P (A|B) is

(A) 0 (B) $\frac{1}{2}$ (C) not defined (D) 1

II. Fill in the blanks by choosing the appropriate answer from those given in the bracket.

($\frac{5}{2}$, $\frac{1}{36}$, $\frac{1}{3}$, 0, 2) **5×1 = 5**

11. For a square matrix A in matrix equation AX = B. If |A| = 0 and (*adj* A) B ≠ 0, then there exists …… solution.

12. The order of the differential equation. $2x^2\left(\frac{d^2y}{dx^2}\right) - 3\left(\frac{dy}{dx}\right) + y$ *is* ……

13. Sum of the intercepts cut off by the plane 2x + y – z = 5 is ……

14. The slope of the normal to the curve $y = 2x^2 - 3 \sin x$ at $x = 0$ is ……

15. The probability of obtaining an even prime number on each die, when a pair of dice is rolled is…..

III. Answer all the following questions **5×1 = 5**

16. Define a bijective function.

17. Find the derivative of the function sec($\tan\sqrt{x}$) with respect to x.

18. Define feasible solutions in a linear programming problem.

19. Find $\int \frac{1-sinx}{cos^2x}\, dx$.

20. Define Negative of a Vector.

PART B

Answer any NINE questions: **9× 2 = 18**

21. Find *gof* and *fog*, if $f : R \to R$ and $g : R \to R$ are given by $g(x) = x^{\frac{1}{3}}$ and $f(x) = 8x^3$.

22. Prove that $\tan^{-1} x + \cot^{-1} x = \frac{\pi}{2}$, $x \in R$.

23. If $\sin\left\{\sin^{-1}\frac{1}{5} + \cos^{-1} x\right\} = 1$, find x.

24. Find the area of the triangle whose vertices are $(2,7),(1,1)$ and $(10,8)$ using determinants.

25. Find $\frac{dy}{dx}$, if $2x+3y=\sin x$.

26. If $y=x^{\sin x}$, $x>0$, find $\frac{dy}{dx}$.

27. Find the local maximum value of the function $g(x)=x^3-3x$.

28. Evaluate $\int \sin 3x \cos 4x \, dx$.

29. Evaluate $\int_0^{\pi/2} \cos 2x \, dx$.

30. Form the differential equation representing the family of curves $y = mx$, where, m is arbitrary constant.

31. Find the area of a triangle having the points A(1, 1, 1), B(1, 2, 3) and C(2, 3, 1) as its vertices.

32. Find a vector in the direction of the $\vec{a}=\hat{i}-2\hat{j}$ that has magnitude 7 units.

33. Find the angle between the line $\frac{x+1}{2}=\frac{y}{3}=\frac{z-3}{6}$ and the plane $10x+2y-11z=3$.

34. Find the probability distribution of number of heads in two tosses of a coin.

PART C

Answer any NINE questions: **9×3 = 27**

35. Show that the relation R in R defined as $R=\{(a,b):a\le b\}$, is reflexive and transitive but not symmetric.

36. Solve: $\tan^{-1}\left(\frac{x-1}{x-2}\right)+\tan^{-1}\left(\frac{x+1}{x+2}\right)=\frac{\pi}{4}$.

37. Express $\begin{bmatrix}3 & 5\\ 1 & -1\end{bmatrix}$ as the sum of a symmetric and skew symmetric matrices.

38. If $y=\cos^{-1}\left(\frac{1-x^2}{1+x^2}\right)$, $0<x<1$ then find $\frac{dy}{dx}$.

39. Verify Rolle's theorem for the function $f(x)=x^2+2x-8$, $x\in[-4,2]$.

40. Find the intervals in which the function f given by $f(x)=4x^3-6x^2-72x+30$ is
    (i) strictly increasing; (ii) strictly decreasing.

41. Find $\int x\cos x \, dx$.

42. Find $\int \frac{x}{(x+1)\,(x+2)}\,dx$.

43. Find the area of the region bounded by the curve $y^2 = x$ and the lines $x = 1$, $x = 4$ and the x-axis in the first quadrant.

44. Find the equation of the curve passing through the point (–2, 3), given that the slope of the tangent to the curve at any point (x, y) is $\frac{2x}{y^2}$.

45. For any three vectors $\vec{a}, \vec{b}$ and $\vec{c}$ prove that $\left[\vec{a}+\vec{b} \quad \vec{b}+\vec{c} \quad \vec{c}+\vec{d}\right] = 2\left[\vec{a} \quad \vec{b} \quad \vec{c}\right]$.

46. If $\vec{a}$, $\vec{b}$ and $\vec{c}$ are three unit vectors such that $\vec{a}+\vec{b}+\vec{c} = \vec{0}$ find the value of $\vec{a}\cdot\vec{b} + \vec{b}\cdot\vec{c} + \vec{c}\cdot\vec{a}$.

47. Find the vector equation of the plane passing through the intersection of the planes 3x - y + 2z – 4 = 0 and x + y + z -3 = 0 and the point (2, 2, 1).

48. A man is known to speak truth 3 out of 4 times. He throws a die and reports that it is a six. Find the probability that it is actually a six.

PART D

Answer any FIVE questions: **5× 5 = 25**

49. Let $f : N \to R$ be a function defined as $f(x) = 4x^2 + 12x + 15$. Show that $f : N \to S$, where S is the range of function f, is invertible. Find the inverse of f.

50. If $A = \begin{bmatrix} 0 & 6 & 7 \\ -6 & 0 & 8 \\ 7 & -8 & 0 \end{bmatrix}$, $B = \begin{bmatrix} 0 & 1 & 1 \\ 1 & 0 & 2 \\ 1 & 2 & 0 \end{bmatrix}$ and $C = \begin{bmatrix} 2 \\ -2 \\ 3 \end{bmatrix}$, calculate AB, AC and A(B + C). Verify that $A(B+C) = AB + AC$.

51. Solve the following system of equations by matrix method:
x - y + z = 4; x +y + z = 2 and $2x$ +y -3z = 0.

52. If $y = 3\cos(\log x) + 4\sin(\log x)$ show that $x^2 y_2 + x y_1 + y = 0$.

53. A ladder 5 m long is leaning against a wall. The bottom of the ladder is pulled along the ground, away from the wall at the rate of 2 cm/sec. How fast is its height on the wall decreasing when the foot of the ladder is 4m away from the wall?

54. Find the integral of $\frac{1}{\sqrt{a^2 - x^2}}$ with respect to x and evaluate $\int \frac{dx}{\sqrt{7 - 6x - x^2}}$.

55. Find the smaller area enclosed by the circle $x^2 + y^2 = 4$ and the line $x + y = 2$.

56. Find the particular solution of the differential equation $\frac{dy}{dx} + y\cot x = 4x \cdot \text{cosec } x$, $x \neq 0$, given that $y = 0$ when $x = \frac{\pi}{2}$.

57. Derive the equation of the line in space passing through two given points both in vector and Cartesian form.

58. If a fair coin is tossed 10 times, find the probability of

(i) exactly six heads (ii) at least six heads.

PART E

Answer the following questions:

59. Maximize; $z = 4x + y$ subject to constraints $x + y \leq 50,\ 3x + y \leq 90,\ x \geq 0,\ y \geq 0$ by graphical method.

OR

Prove that $\int_a^b f(x)\,dx = \int_a^b f(a+b-x)\,dx$ and hence evaluate $\int_{\frac{\pi}{6}}^{\frac{\pi}{3}} \frac{1}{1+\sqrt{\tan x}}\,dx$. **6**

60. Find the value of k so that the function $f(x) = \begin{cases} kx+1, & \text{if } x \leq 5 \\ 3x-5, & \text{if } x > 5 \end{cases}$, at $x = 5$ is a continuous function.

OR

Prove that $\begin{vmatrix} 1 & a & a^2 \\ 1 & b & b^2 \\ 1 & c & c^2 \end{vmatrix} = (a-b)(b-c)(c-a)$. **4**

KARNATAKA STATE PRE-UNIVERSITY EDUCATION
II PU Computer Science Blueprint

UNIT	DESCRIPTION	VSA (1 Mark)	SA (2 Marks)	LA (3 Marks)	E (5 Marks)	Total Marks
Chapter 1 5 Hrs	Typical configuration of Computer system	**1(mcq)**	------	1	-------	**4**
Chapter 2 10 Hrs	Boolean algebra	**1(mcq)**	2	-----	1	**09+1**
Chapter 3 5 Hrs	Logic Gates	**1(mcq)**	------	1	-------	**04**
Chapter 4 15 Hrs	Data structures	**1(mcq)**	------	1	2	**14**
Chapter 5 3 Hrs	**Review of C++ covered in First PUC**	-------	-------	-------	------	**----**
Chapter 6 4 Hrs	OOP concepts	----	1	----	1	**07**
Chapter 7 6 Hrs	Classes and objects	**1(mcq)**	------	-----	1	**06**
Chapter 8 3 Hrs	Function Overloading	**1(mcq)**	------	------	1	**05+1**
Chapter 9 8 Hrs	Constructors and Destructors	**1(mcq)**	1	----	1	**07+1**
Chapter 10 8 Hrs	Inheritance	**1(mcq)**	-----	------	1	**05+1**
Chapter 11 7 Hrs	Pointers	**1(mcq)**	-----	1	------	**04**
Chapter 12 6 Hrs	Data File handling	-------	1	1	------	**05**
Chapter 13 8 Hrs	Database concepts	**1(mcq) 5x1-Fill-in blank**	1	1	1	**11+5**
Chapter 14 12 Hrs	SQL commands	**1(mcq)**	1	-----	1	**07+1**
Chapter 15 10 Hrs	Networking Concepts	**2(mcq)**	1	----	1	**9**
Chapter 16 5 Hrs	Internet and Open source concepts	**1(mcq)**	----	1	-----	**4**
Chapter 17 5 Hrs	Web Designing	**1(mcq)**	-----	1	------	**4**
	Total Marks	10+10	16	24	55	**115**
	Total No of Questions to be answered	**1x20=20**	**2x4/8=08**	**3x4/8=12**	**5x6/11=30**	**70/47**

NOTE: 1. Questions should be direct
2. The answers should be present in the prescribed textbook by PUE
3. 40% - Simple, 40% - Average and 20% - Difficult questions
4. Questions should be according to Blueprint

II PU COMPUTER SCIENCE – MODEL PAPER

PART – A

Answer all the questions. Each question carries one mark. **1 x 20 = 20**

I Select the correct answer from the choices given: ***(Repeated answers will not be considered)***

1. Which among the following is the fastest memory in a computer that holds information?
   a) Register b) Cache
   c) Main memory d) RAM
2. The other name of Boolean algebra is _____
   a) Switching algebra b) Relational Algebra
   c) Digital Algebra d) None of the above
3. The other name of NOT gate is _____
   a) Neglect gate b) Inverter gate
   c) XOR gate d) XNOR gate
4. The data structure that allows the insertion, as well as the deletion from both the ends, are:
   a) String b) Linked List data structure
   c) Stack data structure d) Dequeue data structure
5. What is the other name used for functions inside a class?
   a) Member variables b) Member functions
   c) Class functions d) Class variables
6. Function cannot be overloaded when _____
   a) Function names are same b) Number of parameters are different
   c) Number of parameters are same d) Data types of parameters are different
7. The symbol used with constructor is _____
   a) $ b) &
   c) Delta c) ~
8. Base class is _____
   a) a sub class b) inherited class
   c) Main class d) First class
9. Which of the following is the correct way to declare a pointer?
   a) int *ptr b) int ptr
   c) int &ptr d) All of the above
10. _____ is called information.
    a) Raw fact b) collection of data
    c) Unprocessed data d) Processed data
11. SQL is _____.
    a) Theoretical Language b) Procedural Language
    c) Structured Language d) Unstructured Language

12. FTP stands for _____

a) Final Transistor Protocol b) File Transformation Protocol

c) File Transfer Protocol d) File Transaction Protocol

13. Which of the following is not a type of network?

a) LAN b) MAN

c) PAN d) VAN

14. A software and coding which is freely available on internet is _____.

a) Community Software b) Free Software

c) Open-Source Software d) Unlicensed Software

15. HTML stands for _____

a) Hyper Text Makeup Language b) Hyper Text Markup Language

c) Hyper Text Marking Language d) Hyper Text Marker Language

II Fill in the blanks choosing the appropriate word/words from those given in brackets.

(Repeated answers will not be considered)

(Security, Redundancy, DBMS, Database, Table)

16. Collection of rows and columns is called as _____
17. _____ is a collection of interrelated data.
18. Data duplication is called as _____.
19. _____is a software for creating and managing databases.
20. Protection of data is the _____.

PART – B

Answer any FOUR questions. Each question carries two marks. **2 x 4 = 8**

21. Prove $\overline{\overline{X}} = X$.
22. Define tautology and fallacy.
23. What is encapsulation? Give an example.
24. What is destructor? Give example for destructor.
25. Mention any two functions of ifstream and give their meaning.
26. Give any two advantages of database system.
27. Give the syntax and example for INSERT command in SQL.
28. Briefly explain circuit switching.

PART – C

Answer any FOUR questions. Each question carries three marks. **3 x 4 = 12**

29. Briefly explain any three types of mother board.
30. Write the logic diagram and the truth table for XOR gate.
31. Give the memory representation of stack data structure.
32. Mention any three advantages of pointers.
33. What is a data file? Differentiate between text and binary files.
34. Give the meaning for any three components of E-R diagram.
35. What is e-commerce? Explain any one type of e-commerce.
36. Explain any three table tags in HTML.

PART – D

Answer any SIX questions. Each question carries five marks. **5 x 6 = 30**

37. Give the Boolean function $F(A,B,C,D) = \Sigma(0,2,5,7,8,10,13,15)$.
    Reduce it by using Karnaugh map (K-Map).
38. Explain any five operations performed on primitive data structure.
39. Write an algorithm to delete a data element from an array.
40. Give the differences between procedural programming and object-oriented programming.
41. With an example explain member function inside the class definition.
42. What is a friend function? Mention the characteristics of a friend function.
43. What is a parameterized constructor? Mention the advantages of parameterized constructor.
44. What is inheritance? Explain any two types of inheritance.
45. Differentiate between manual and electronic data processing.
46. Explain CREATE and UPDATE commands in SQL.
47. Explain the following:
    i. SMS ii. E-mail iii. Voice mail iv. Chat v. Video conference

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