ENGLISH PAPER 1
(LANGUAGE)

(Maximum Marks: 100)

(Time allowed: Three hours)

*(Candidates are allowed **additional 15 minutes** for **only** reading the paper.*
They must NOT start writing during this time.)

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*Attempt all **four** questions.*

The intended marks for questions or parts of questions are given in brackets [ ].

*(You are advised to spend not more than **45 minutes** on Question 1, **55 minutes** on*
*Question 2, **30 minutes** on Question 3 and **50 minutes** on Question 4.)*

(You should begin each answer on a fresh page.)

Question 1

Write a composition (in approximately 400 – 450 words) on **any one** of the following subjects: [25]

(You are reminded that you will be rewarded for orderly and coherent presentation of material, use of appropriate style and general accuracy of spelling, punctuation and grammar.)

(a)   Recently, you travelled to a place you found peaceful and rewarding. Describe the place, the weather, the people and the local activities that make this destination particularly attractive.

(b)   Narrate an experience when you took on a responsibility in your school that you usually would not, and you were pleasantly surprised at the outcome.

(c)   "If winter comes, can spring be far behind?" Express your views on this statement.

(d)   Solitude.

(e)   Students should be allowed to use electronic gadgets in the classroom. Argue for or against this proposition.

(f)   Write an original short story that begins with the line:

The lone young man who sat hunched on the park bench had an unusual gleam in his eyes.

This Paper consists of 6 printed pages.

Question 2

(a) As the Secretary of the Creative Arts Club of XYZ School, you organised an [20] inter-school drama competition. Write a report for the school magazine in not more than 300 words, detailing the success of the event based on the following points:

Date, time and place – objective of the event – inauguration – schools involved – judges invited – response of participants – reaction of audience – plan for similar events in future.

(b) As a member of the Student Council, you have been given the responsibility of [10] arranging for a career guidance workshop. Write a proposal in not more than 150 words, stating the steps you would take to make the workshop a success.

Question 3

Answer sections **(a), (b)** and **(c)**.

(a) In each of the following items, sentence **A** is complete, while sentence **B** is not. [10] Complete sentence **B**, making it as similar as possible to sentence **A**. Write sentence **B** in each case.
Example:

(0) (A) As soon as the bell rings, the children run out to play.

    (B) No sooner……………………………………….

Answer: (0) No sooner does the bell ring than the children run out to play.

1 (A) When he returned, we asked him many questions.

    (B) On his……………………………………..

2 (A) He arrived and the crowd went hysterical with joy.

    (B) Scarcely………………………………………..

3 (A) The bus service has been interrupted by floods.

    (B) Floods…………………………………….

4 (A) This scenery is breath-taking.

    (B) How…………………………………….

5 (A) You are entitled to a discount as long as the offer lasts.

    (B) So long………………………………………..

6 (A) He is so tall that he cannot enter through this door.

    (B) He is too………………………………….

7 (A) The doctor said to him, "Drink at least three litres of water every day."

    (B) The doctor advised……………………………….

8   (A)   Sunita is the best debater in our team.

    (B)   No other..

9   (A)   Not only did he score a century but also took three important wickets.

    (B)   Besides...

10 (A)   I am sorry I am unable to accompany you.

    (B)   I regret my ....

(b) Fill in each blank with a suitable word. (Do not write the sentence.)   **[5]**

1   The antique furniture was sold _____ an auction.

2   The tickets were sold _____ within an hour.

3   I realized I had walked _____ a trap, but it was too late.

4   She had walked _____ two hours before she realized she was lost.

5   Can he take _____ the additional responsibility?

6   She takes _____ her mother in all her mannerisms.

7   Neha turned _____ a new leaf after the incident.

8   I did not expect so many people to turn _____ for the conference.

9   The students brought_____ the first issue of their magazine.

10   Mowgli was brought _____ by wolves in the jungle.

(c) Fill in the blanks in the passage given below with the appropriate form of the verb   **[5]**
given in brackets. Do not write the passage but write the verbs in the correct order.

When Albert Einstein _____(1)(be) three years old, his parents _____(2)(be) very worried. He _____(3)(seem) intelligent, but had not spoken a single word. They _____(4)(take) him to many doctors who _____(5)(say) that they_____(6)(find) nothing wrong with the child. One day, at the dinner table, Albert suddenly said, "The soup _____(7)(be) too hot." The shocked parents _____(8)(ask) him why he _____(9)(remain) silent for so long. The young child solemnly replied, "Everything _____(10)(be) in order until now."

Question 4

Read the passage given below and answer the questions (a), (b) and (c) that follow:

(1) My job as the District Veterinarian in Darrowby, Yorkshire has thrown up some interesting moments. I was driving up to Pawson's sheep farm one morning, when I saw this rare sight.

(2) I suppose it isn't unusual to see a man pushing a pram in a town, but on a lonely moorland road this scene merits a second glance. Especially when the pram 5 contains a large gray dog. I drew up beside them and stopped.

(3) I looked at the pram, ancient and rusty, and at the big animal sitting upright inside it. He was a cross-bred greyhound, and he gazed back at me with unruffled dignity. I couldn't help but admire his healthy and happy disposition.

(4) "Nice dog," I said. 10

(5) "Aye, that's Jake." The man smiled, introducing himself as Roddy.

(6) That same evening, about eight o'clock, the doorbell rang. I answered it and found Roddy on the front doorstep. Behind him, stood the ubiquitous pram. One look at the prone dog warned me that something was terribly wrong.

(7) I threw the door wide open. "Bring him in." 15

(8) I grabbed the animal round the <u>middle</u> and we lifted him onto the table. I watched in disbelief as the huge form lay there. There was no fight for breath, he was unconscious. His pulse was rapid and feeble, yet he didn't breathe.

(9) Understanding the symptoms, I said, "Roddy, he is choking. I'm going to have a look at his throat." 20

(10) I pushed Jake's jaws apart, depressed his tongue with a forefinger, and shone my torch into the depths. He was the kind of good-natured dog who offered no resistance as I prodded around. I shall always be thankful that at that very instant the dog coughed, opening up the cartilages of the larynx and giving me a glimpse of the cause of all the trouble. There, beyond the drooping epiglottis, I saw for a 25 fleeting moment a smooth round object no bigger than a pea.

(11) "I think it's a pebble," I gasped. "Right inside his larynx. I'll have to get it out."

(12) I seized a pair of scissors and clipped away the hair from the ventral surface of the larynx. I dared not use a general anesthetic, and therefore I infiltrated the area with local before swabbing with antiseptic. 30

(13) "Hold his head steady," I said hoarsely, and gripped a scalpel. I cut down through skin, fascia, and the thin layers of the muscle until the ventral surface of the larynx was revealed.

4

(14) And there it was. A pebble right enough—gray and glistening and tiny, but big enough to kill. 35

(15) I had to fish it out quickly and cleanly without pushing it into the trachea. I leaned back and rummaged in the tray until I found some broad-bladed forceps, then I poised them over the <u>wound</u>. Great surgeons' hands, I felt sure, didn't shake like this.

(16) I clenched my teeth, <u>introduced</u> the forceps, and my hand magically steadied as I clamped them over the pebble. 40

(17) I didn't breathe at all as I bore the shining little object slowly and tenderly through the opening and dropped it with a gentle rat-tat on the table.

(18) "Is that it?" asked Roddy, almost in a whisper.

(19) "That's it." I reached for a needle and suture silk. "All is <u>well</u> now." 45

(20) The stitching took only a few minutes and by the end of it, Jake was bright-eyed and alert, paws shifting impatiently, ready for anything.

(21) He seemed to know his troubles were over.

Adapted from: *James Herriot's Favorite Dog Stories*

(a) (i) Given below are four words and phrases. Find the words which have a similar meaning in the passage: [4]

(1) deserves

(2) undisturbed

(3) being unable to breathe

(4) wet and shining

(ii) For each of the words given below, write a sentence of at least ten words using the same word **unchanged in form, but with a different meaning** from that which it carries in the passage: [4]

(1) middle (*line 16*)

(2) wound (*line 38*)

(3) introduced (*line 40*)

(4) well (*line 45*)

(b) Answer the following questions in your own words as briefly as possible:

    (i)   What was unusual about the pram on the moorland road?   **[2]**

    (ii)   How did the narrator know that the dog was choking?   **[2]**

    (iii) Describe how the narrator found the cause of the choking?   **[3]**

    (iv) What preparations did the narrator make before the surgery?   **[2]**

(c) Summarise how the narrator removed the pebble and saved Jake's life.   **[8]**
(Paragraphs 11 to 19). You are required to write the summary in the form of a connected passage in about 100 words. Failure to keep within the word limit will be penalised.

ENGLISH PAPER 2
LITERATURE IN ENGLISH
(Prescribed Textbooks)

(Maximum Marks: 100)
(Time allowed: Three hours)

*(Candidates are allowed additional 15 minutes for **only** reading the paper.
They must NOT start writing during this time.)*

Answer **one** question from Section **A** and **four** questions from Section **B**.
In Section B choose questions on at least **three** textbooks which **may** include **EITHER**
Shakespeare's **The Tempest OR** Bernard Shaw's **Candida**
Note: You are required to select questions on **one play only**,
EITHER The Tempest **OR** Candida in Sections A and B.
The intended marks for questions or parts of questions are given in brackets [ ].

SECTION A
(Answer one question)
THE TEMPEST — *Shakespeare*

Question 1

Choose **two** of the passages (**a**) to (**c**) and answer briefly the questions that follow:

(a) Prospero   :   This blue-eyed hag was hither brought with child,

And here was left by th' sailors. Thou, my slave,

As thou report'st thyself, was then her servant,

And for thou wast a spirit too delicate

To act her earthy and abhorr'd commands,

Refusing her grand hests, she did confine thee,

By help of her more potent ministers

And in her most unmitigable rage,

Into a cloven pine.....

(i)   What leads Prospero to talk about the 'blue-eyed hag'?   [1]

(ii) Why was she brought to this island?   [2]

(iii) What account do we get of Ariel's suffering in the cloven pine? Who had   [2]
saved him and how?

This Paper consists of 7 printed pages and 1 blank page.

Turn over

(iv) How does Prospero describe the hag's son?   [2

(v)   What does Prospero threaten to do to Ariel now? What effect does his threat   [2
      have on Ariel?

(vi) Give the meanings of the following words in the context of the passage: [1

      abhorr'd,   cloven

(b) Caliban   :   I prithee let me bring thee where crabs grow,

                             And I with my long nails will dig thee pig-nuts,

                             Show thee a jay's nest, and instruct thee how

                             To snare the nimble marmoset. I'll bring thee

                             To clust'ring filberts, and sometimes I'll get thee

                             Young scamels from the rock. Wilt thou go with me?

(i)   To whom is Caliban speaking these lines?   [1]

(ii)   Briefly describe the circumstance under which he had met them.   [2]

(iii) Who does he think they are? Why?   [2]

(iv)   To which other person had Caliban shown such a slavish attitude? What   [2]
       had the result been?

(v)   How do his present listeners respond to his words?   [2]

(vi)   Give the meanings of the following words as they are used in the context of   [1]
       the passage:

              snare,   marmoset

(c) Ariel   :   Thy thoughts I cleave to. What's thy pleasure?

     Prospero   :   Spirit, we must prepare to meet with Caliban.

     Ariel   :   Ay, my commander. When I presented Ceres

                         I thought to have told thee of it, but I fear'd

                         Lest I might anger thee.

     Prospero   :   Say again, where didst thou leave these varlets?

(i)   For whom is the term varlets being used?   [1]

(ii)   What comical behaviour of theirs does Ariel narrate now?   [2]

(iii) Where had these people been going? Why?   [2]

(iv)   Where did Ariel leave them eventually? What did they do then?   [2]

(v)   What does Prospero tell Ariel to do? Why?   [2]

2

(vi)   Give the meaning of the following words as they are used in the context of   [1]
the passage:

cleave,   varlets

CANDIDA — *George Bernard Shaw*

Question 2

Choose **two** of the passages **(a)** to **(c)** and answer briefly the questions which follow:

(a)   Morell   :   (*thoughtfully*) Hm! Time for him to take another look at
Candida before she grows out of his knowledge. (*He
resigns himself to the inevitable, and goes out*).

*Lexy looks after him with beaming worship.
Miss Garnett, not being able to shake Lexy, relieves her
feelings by worrying the typewriter.*

Lexy   :   What a good man! What a thorough loving soul he is!
(*He takes Morell's place at the table, making himself
very comfortable as he takes out a cigaret*).

Proserpine   :   (*impatiently, pulling the letter she has been working at
off the typewriter and folding it*) Oh, a man ought to be
able to be fond of his wife without making a fool of
himself about her.

Lexy   :   (*shocked*) Oh, Miss Prossy!

(i)   Who is Morell talking about? How does he react when he gets to know   [1]
about the arrival of this person?

(ii)   What advice has Morell given Lexy about marriage?   [2]

(iii)   What does Proserpine say further to express her displeasure?   [2]

(iv)   When Lexy expresses unhappiness at Proserpine's feelings against Candida,   [2]
how does Prossy defend herself?

(v)   Judging by Lexy's disbelief, how does Proserpine condemn men's ideas   [2]
about women?

(vi)   How does Lexy voice his regret then?   [1]

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Turn over

(b) Marchbanks : *(stopping her mysteriously)* Hush! I go about in search of love; and I find it in unmeasured stores in the bosoms of others. But when I try to ask for it, this horrible shyness strangles me; and I stand dumb, or worse than dumb, saying meaningless things: foolish lies. And I see the affection I am longing for given to dogs and cats and pet birds, because they come and ask for it. *(Almost whispering)* It must be asked for: it is like a ghost: it cannot speak unless it is first spoken to. *(At his usual pitch, but with deep melancholy)* All the love in the world is longing to speak; only it dare not, because it is shy! shy! shy! That is the world's tragedy. *(With a deep sigh, he sits in the visitors' chair and buries his face in his hands.)*

Proserpine : *(amazed, but keeping her wits about her: her point of honor in encounters with strange young men)* Wicked people get over that shyness occasionally, don't they?

(i) Where are Marchbanks and Proserpine? [1]

(ii) How does Marchbanks offend Proserpine? [2]

(iii) What are Marchbanks' ideas of love? [2]

(iv) What is 'like a ghost'? Why has he used this reference? [2]

(v) What does Marchbanks tell about his shyness to Proserpine? [2]

(vi) Does Marchbanks agree with Proserpine when she says that wicked people [1] do not feel shy?

(c) Marchbanks : [*Convulsively*] Onions!

Candida : Yes, onions. Not even Spanish ones: nasty little red onions. You shall help me to slice them. Come along.
[*She catches him by the wrist and runs out, pulling him after her. Burgess rises in consternation, and stands aghast on the hearth-rug, staring after them.*]

Burgess : Candy didnt oughter andle a hearl's nevvy like that. Its goin too fur with it.

4

(i)	Why is Marchbanks disgusted by the onions?	[1]
(ii)	Why had he been similarly agitated a little earlier?	[2]
(iii)	How had Candida responded then?	[2]
(iv)	Why is Burgess shocked?	[2]
(v)	What does he get to know about Marchbanks soon?	[2]
(vi)	Why does Morell appear disinterested?	[1]

SECTION B

*(Answer **four** questions on at least **three** textbooks which may include **EITHER***
The Tempest OR Candida.)

THE TEMPEST — *Shakespeare*

Question 3

Referring closely to Act IV, scene i:

(a) Describe the blessings showered by Ceres and Iris on Miranda and Ferdinand. [8] What is the significance of these blessings?

(b) What did Prospero tell Ferdinand just before the masque? What did he emphasize [6] and how did Ferdinand answer him?

(c) What do you conclude about Prospero from the events that occur in the act? [6]

Question 4 [20]

Prospero refers to Caliban as "A devil, a born devil". In this context, evaluate the character and role of Caliban in the play.

CANDIDA — *George Bernard Shaw*

Question 5

Referring closely to Act III of the play *Candida*:

(a) Describe the conflict between Marchbanks and Morell regarding Candida. [8]

(b) Describe the auction that Candida initiates. Why do you think she terms it an [6] auction?

(c) What is the reason for the choice made by her at the end of the play? [6]

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Question 6 [20]

In the play *Candida*, Shaw presents Candida as an unconventional woman. Discuss.

THINGS FALL APART — *Achebe*

Question 7

Referring closely to the events, answer the following:

(a) How is the Church established and what is the role of the white men in establishing it? [8]

(b) Why does Nwoyi secretly become attracted to religion of the missionaries? What was his father's reaction? [6]

(c) Which circumstances had led to the suicide of Okonkwo? [6]

Question 8 [20]

How is the story about why mosquitoes buzz around people's ears relevant to the novel?

Question 9 [20]

"His whole life was dominated by fear of failure and of weakness." Do you think this is true of Okonkwo? Give your views with reference to the novel.

CONTEMPLATIONS

Question 10

Referring closely to the essay '*My Visions of India*', answer the following:

(a) Relate the first and second vision of Dr. Kalam. [8]

(b) What does he say about his third vision? [6]

(c) How does Dr. Kalam co-relate his message with the message of J. F. Kennedy? [6]

Question 11 [20]

Referring closely to the essay *On being Idle*, discuss how the writer treats a light subject with a serious message.

Question 12 [20]

In the essay *On the Decay of The Art of Lying*, what makes Mark Twain argue that "*the Lie, as a Virtue, A Principle, is eternal*"? According to Mark Twain, what is a *silent lie*? What example does he give to demonstrate a silent lie? Why does he oppose injurious truth and injurious lying?

ECHOES

Question 13

Referring closely to the short story **B. Wordsworth**:

(a) Describe the interaction between B. Wordsworth and the young narrator. [8]

(b) What did the narrator learn from his friend? [6]

(c) Do you feel that B. Wordsworth was an escapist? Give reasons for your answer. [6]

Question 14 [20]

How does Roald Dahl depict the theme of obsession in his short story, **The Sound Machine**?

Question 15 [20]

How successful was the writer in bringing out the protagonist's innate goodness in the short story, **Salvatore**?

REVERIE

Question 16

Referring closely to the poem **Dover Beach**:

(a) Describe the moonlit scene described by the poet at the beginning of the poem. [8]

(b) How does the poet introduce the note of melancholy and disturbance? In this context, what does he say about Faith? [6]

(c) What does the poet say about the world in which he finds himself? What is the only hope left for mankind? [6]

Question 17 [20]

How is the power of the Music Makers brought out in **We are the Music Makers**?

Question 18 [20]

The poem **John Brown** presents two attitudes to war. Describe the two attitudes. Which one do you sympathise with? Why?

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BENGALI

(Maximum Marks : 100)

(Time allowed : Three hours)

*(Candidates are allowed **additional 15 minutes** for **only** reading the paper.*
They must NOT start writing during this time.)

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*Answer questions **1, 2** and **3** in Section **A** and **four** other questions from*
*Section **B** on **at least three** of the prescribed textbooks.*

The intended marks for questions or parts of questions are given in brackets [ ].

SECTION–A

LANGUAGE – 50 MARKS

Question 1

Write a composition in approximately **400** words in Bengali on any **one** of the
topics given below :

[20]

নিম্নলিখিত যে কোনো একটি বিষয়ের উপর প্রায় ৪০০ শব্দে একটি রচনা লেখ :

(i)   কোন এক বিশেষ শিক্ষকের কথা লেখ, যার দ্বারা তুমি অনুপ্রাণিত হয়ে ভালো মানুষ হয়ে ওঠার
       তাগিদ অনুভব করেছ।

(ii) 'আজকের প্রজন্ম ফ্যাশানের শিকার'— আলোচনা কর।

(iii) 'গতি' (Speed)

(iv) 'অত্যধিক প্রত্যাশা (Expectation) আমাদের অসুখী করে তোলে'— এর পক্ষে বা বিপক্ষে
       তোমার মতামত দাও।

(v)   বর্তমান ভারতবর্ষে তীব্র জলসংকট দেখা দিয়েছে। এর কারণ, এর প্রভাব ও সমাধান কী হতে
       পারে বলে তুমি মনে কর — তোমার মতামত আলোচনা কর।

(vi) নিম্নলিখিত যে কোন একটি বিষয়ের উপর মৌলিক গল্প লেখ :

       (a) 'সুখ' (Happiness)

       (b) বিসর্জন (Immersion)

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Turn over

Question 2

Read the passage given below carefully and answer in Bengali questions (i), (ii), (iii), (iv) and (v) that follow, using your own words :

নিম্নলিখিত রচনাটি ভাল করে পড়ে বাংলা ভাষায় (i), (ii), (iii), (iv) এবং (v) প্রশ্নগুলির উত্তর দাও। উত্তরগুলি নিজের ভাষায় লেখা বাঞ্ছনীয় :

রবীন্দ্রনাথ ঠাকুরের প্রিয় পানীয় ছিল চা। তিনি জাপানি চা খুব ভালবাসতেন। পছন্দ করতেন জাপানিদের চা পানের রীতিটিকেও। তিনি যখন জাপান গেছিলেন তখন প্রতিদিনই তাঁর জন্য তাই 'টি সেরিমণির' আয়োজন করা হ'ত। তাঁর লেখা 'জাপান যাত্রীর ডায়েরি' পড়লে বোঝা যায় কেন তিনি জাপানি চা পানের রীতিকে এত পছন্দ করতেন। তিনি মনে করতেন ধৈর্য, নিষ্ঠা ও মনঃসংযোগ না থাকলে জাপানি চা তৈরি করা যায় না। তিনি লিখেছিলেন, 'দেখেছি, শরীর মনকে একান্ত সংযত করে নিরাসক্ত প্রশান্ত মনে সৌন্দর্যকে নিজের প্রকৃতির মধ্যে গ্রহণ করা — ভোগীর উন্মাদনা নয়, কোথাও লেশমাত্র অমিতাচার নেই ; সৌন্দর্যের গভীরতার মধ্যে নিজেকে সমাহিত করাই হচ্ছে এই চা-পান অনুষ্ঠানের তাৎপর্য।'

জাপানি রীতিতে চায়ের আসর একটি সাদা পর্দায় ঘেরা থাকে। মাঝে একটা টেবিলে থাকে চা তৈরির সরঞ্জাম ওকামা (জলগরম করার পাত্র), হিসাকু (বাঁশের হাতল দেওয়া লম্বা হাতা), চাওয়ান (চা পানের পাত্র) আর নাৎসুমে (তৈরি চা ঢালার পাত্র)। চাওয়ানের গায়ে থাকে সুদৃশ্য ডিজাইন।

চা তৈরির আগে অতিথিরা এসে বসেন। একেবারে ডানদিকের আসনে যিনি বসেন, তিনিই জাপানি রীতিতে প্রধান অতিথি। অতিথিরা সবাই আসন গ্রহণ করলে সাদা পর্দা সরিয়ে আসেন চা মাস্টার।

জাপানে বিভিন্ন ঘরাণায় চা তৈরি হয়। চা-মাস্টারও বিভিন্ন ঘরাণার হন। চা তৈরির আগে মাস্টার প্রত্যেক অতিথির কাছে নিয়ে যান মিষ্টির প্লেট। মিষ্টি বিলির পর শুরু হয় চা তৈরির দীর্ঘ প্রক্রিয়া। প্রথমে দীর্ঘক্ষণ ধরে সাদা রুমাল দিয়ে চায়ের সরঞ্জাম মোছা হয়। তারপর ওকামায় জল গরমের পালা। হিসাকু দিয়ে সেই গরম জল তুলে অন্য সরঞ্জাম ও পাত্রগুলি ধুয়ে নেন মাস্টার। পাশের পাত্রে সেই ধোয়া জল ফেলে আবার মুছে নেন চাওয়ান। তারপর তাতে গরম জল ঢেলে সুন্দর বাঁশের দণ্ড দিয়ে মেশানো হয় জাপানি চা। সেই চা প্রথম দেওয়া হয় প্রধান অতিথির হাতে। রীতি হ'ল অতিথি যতক্ষণ চা পান করবেন ততক্ষণ সামনে দাঁড়িয়ে থাকবেন চা-মাস্টার। পান শেষ হওয়ার পর চাওয়ান ফিরিয়ে নিয়ে অন্য অতিথিকে চা দেন চা মাস্টার। আমাদের মতো সবাই একসঙ্গে চা পানের রীতি নেই জাপানি চা-পানের প্রথায়। জাপানিদের কাছে চা তৈরি একটি দীর্ঘ প্রক্রিয়া। জাপানিরা চা বানানোকে ধর্মানুষ্ঠানের মতো সাধনা মনে করেন।

জোড়াসাঁকোর 'বিচিত্রা' বাড়িতে একবার জাপানি টি-সেরিমণি'র আয়োজন করেছিলেন রবীন্দ্রনাথ। তখন জাপান থেকে কবির কাছে আসতেন অনেক জ্ঞানী-গুণী মানুষ। তাঁদের জাপানি প্রথায় চা পানে নিমন্ত্রণ করেন কবি। সেই উপলক্ষে বিশেষ আকৃতির চায়ের সরঞ্জাম তৈরি করা হয়। কাঠের আগুনের বদলে দোতলায় কয়লার উনুনের বিশেষ ব্যবস্থা হয়। এখনও সেখানে কৃত্রিম কয়লার আগুন, কেটলি ও কাঠের তৈরি চামচ আর কয়েকটি মগ রাখা আছে। যে বিছানায় বসে অতিথিরা সময় কাটিয়েছিলেন সেই বিছানায় এখনো শোভা পায় কবির সঙ্গে তোলা সেই বিখ্যাত ব্যক্তিদের ছবি।

প্রশ্ন :

(i) রবীন্দ্রনাথ ঠাকুর জাপানি চা-পানের রীতি সম্পর্কে কী বলেছেন ? [4]

(ii) জাপানি চা তৈরিতে কী কী সরঞ্জাম লাগে ? [4]

(iii) জাপানে কী একই ধরণে চা বানানো হয় ? এই চা তৈরিতে কার প্রধান ভূমিকা থাকে ? তিনি চা তৈরির আগে কী করেন ? [4]

(iv) জাপানি চা তৈরির প্রক্রিয়ার বর্ণনা দাও। [4]

(v) রবীন্দ্রনাথ ঠাকুর কোথায় একবার 'জাপানি টি-সেরিমণির' আয়োজন করেছিলেন ? অতিথি কারা ছিলেন ? সেই উপলক্ষে তিনি কী ব্যবস্থা করেছিলেন ? [4]

Question 3

(a) Correct the misspelt words : [5]

অশুদ্ধ বানানগুলি শুদ্ধ কর :

(i) দাদশ, (ii) ধ্বনী, (iii) শুস্রুষা, (iv) উদ্যান, (v) মুমূর্সু

(b) Fill in the blanks in the following sentences, selecting appropriate idioms from those given below : [5]

প্রদত্ত বাগধারাগুলির মধ্যে উপযুক্ত বাগধারা বেছে নিম্নলিখিত বাক্যগুলির শূন্যস্থান পূর্ণ কর:

(রাহুর দশা, ঠোঁটকাটা, শনির দৃষ্টি, হাতের পাঁচ, মুখের কথা, মাটির মানুষ, কইমাছের প্রাণ)

(i) মলি যেমন _____ , ওকে সঙ্গে নিয়ে অনুষ্ঠানে যেতে ভয় করে।

(ii) শ্যামল আমার দুঃসময়ে পাশেই দাঁড়ালো না, বুঝলাম ওর প্রতিশ্রুতিটা ছিল _____ ।

(iii) রামবাবুর মত _____ কে এতবড়ো আঘাত দেওয়া উচিৎ হয়নি।

(iv) রাহুলের এখন _____ চলছে, পরীক্ষা খারাপ হ'ল, সাধের মোবাইল ফোনটাও হারালো।

(v) পৈতৃক বাড়িটাই হ'ল_____, এটাকে বিক্রি করার কথা ভেবো না, পথে বসবে।

PRESCRIBED TEXTBOOKS – 50 MARKS

*Answer **four** questions from this section on **at least three** of the prescribed*

textbooks.

প্রবন্ধ ও গদ্যসংকলন

PROBONDHO O GODYA SONKOLON

Question 4

"এই যে পরীক্ষার সময়ে হলঘরে মাস্টারমশাইরা ঘুরে বেড়ান গার্ড হয়ে, তোমাদের পক্ষে এটা

খুব লজ্জার কথা নয় ?"

(i) কার লেখা ? কোন্ মূল গ্রন্থ থেকে নেওয়া হয়েছে ?   [1½]

(ii) বক্তা কে ? কাদের উদ্দেশ্যে বলেছেন ?   [3]

(iii) কোন প্রসঙ্গে বলেছেন ?   [3]

(iv) অংশটির তাৎপর্য আলোচনা কর।   [5]

Question 5

"আমি প্রতিজ্ঞা করেছি, বীর্যগুল্কায় যে আমাকে কিনে নিতে পারবে, তাকেই আমি বিয়ে করব — তা

সে শুদ্রই হোক, আর চণ্ডালই হোক।"

— কার লেখা, কোন্ গল্পের অংশ ? বক্তা কোন্ প্রসঙ্গে কাকে এই কথা বলেছেন ? বীর্যগুল্কা অর্থ

কী? উক্তিটির তাৎপর্য কী ?   [12½]

Question 6

"আমরা যে তিমিরে, সেই তিমিরেই রয়ে গেলুম।"

— আমরা কারা ? বক্তা কোন্ প্রশ্নের সমাধান চাইছিলেন ? সমাধান হ'ল না কেন ? শেষ পর্যন্ত তাদের

কী মনে হ'ল ?   [12½]

কবিতা সংকলন
KOBITA SONKOLON

Question 7

"এই তো জানু পেতে বসেছি, পশ্চিম
আজ বসন্তের শূন্য হাত
ধ্বংস করে দাও আমাকে যদি চাও
আমার সম্ততি স্বপ্নে থাক।

(i) কার লেখা, কোন্ কাব্যগ্রন্থের কবিতা ? কাব্যগ্রন্থটি কত সালে প্রকাশিত হয় ? [1½]

(ii) বক্তা কে ? তিনি জানু পেতে বসে কী করছেন ? [3]

(iii) 'পশ্চিম আজ বসন্তের শূন্য হাত' বলতেই বা কী বোঝানো হয়েছে ? [3]

(iv) 'আমার সম্ততি স্বপ্নে থাক'— তাৎপর্য আলোচনা কর। [5]

Question 8

'পৃথিবীর কালো সাদা হলুদ মানুষের গান, তাদের স্বপ্ন
এক মুহূর্ত সেই চিৎকার শুনে থমকে তাকায়।'

কার লেখা কোন্ কাব্যগ্রন্থের কবিতা ? 'পৃথিবীর কালো, সাদা, হলুদ মানুষের গান, তাদের স্বপ্ন' বলতে
কী বোঝানো হয়েছে ? কখন মানুষের এই প্রেম ও স্বপ্ন স্তব্ধ হয় ? কারা কখন কাদের চিৎকার শুনে
অবাক বিস্ময়ে তাকিয়ে থাকে ? [12½]

Question 9

"আমি ক্লান্ত প্রাণ এক, চারিদিকে জীবনের সমুদ্র সফেন,"

— কার লেখা কোন্ কাব্যগ্রন্থের কবিতা ? এই কবির লেখা অন্য একটি কাব্যগ্রন্থের নাম উল্লেখ কর।
'আমি' কে ? 'জীবনের সমুদ্র সফেন বলতে কী বোঝানো হয়েছে ? কে কাকে শান্তি দিয়েছিলেন ?
বক্তা কীভাবে তাঁকে পেয়েছিলেন ? বক্তা কী ভাবে তার রূপের বর্ণনা দিয়েছেন ? 'পাখির নীড়ের
মতো চোখ' বলতেও বা কী বোঝানো হয়েছে ? [12½]

কোনি
KONI

Question 10

"হঠাৎ তার চোখে ভেসে উঠল '৭০' সংখ্যাটা।"

(i) তার বলতে কাকে বোঝানো হয়েছে ? [1½]

(ii) কখন তার চোখে '৭০' সংখ্যাটা ভেসে ওঠে ? [3]

(iii) তার কাছে '৭০' সংখ্যাটার তাৎপর্য কী ? [3]

(iv) এই সংখ্যাটা 'তার' সামনে তুলে ধরার কারণ কী ? [5]

Question 11

"চিড়িয়াখানায় কোনিকে বেড়াতে নিয়ে গিয়ে কী ঘটেছিল ? এই ঘটনা থেকে ক্ষিতীশ কী উপলব্ধি করেছিলেন ?"   [12½]

Question 12

"কোনির সাফল্যে লীলাবতীর ভূমিকা আলোচনা কর।"   [12½]

মুকুট

MUKUT

Question 13

"এবার তোমার সময় এসেছে, সেই অপমানের শোধ দেবার।"

(i)   বক্তা কে ? কার প্রতি উক্তি করেছেন ?   [1½]
(ii) কোন্ অপমানের কথা এখানে বলা হয়েছে ?   [3]
(iii) কোন্ প্রসঙ্গে বক্তা এই উক্তি করেছেন ?   [3]
(iv) বক্তার কথার উত্তরে শ্রোতা কী বলে ? এ কথায় তার কী মানসিকতা প্রকাশ পেয়েছে ?   [5]

Question 14

"তোমার মুখে এ উপদেশ সাজে না।"

— বক্তা কে ? কাকে বলেছেন ? কোন্ প্রসঙ্গে কথাটি বলা হয়েছে ? উপদেশটা কী ? তার মুখে উপদেশ সাজে না কেন ? বক্তা কী বোঝাতে চেয়েছেন ?   [12½]

Question 15

'মুকুট' নাটকে মধ্যম রাজকুমার ইন্দ্রকুমারের চরিত্র আলোচনা কর।   [12½]

HINDI

(*Maximum Marks : 100*)

(*Time allowed : Three hours*)

(*Candidates are allowed **additional 15 minutes** for **only** reading the paper.*

They must NOT start writing during this time.)

Answer questions **1, 2** and **3** in Section **A** and **four** other questions from Section **B**

on **at least three** of the prescribed textbooks.

The intended marks for questions or parts of questions are given in brackets [ ].

SECTION A

LANGUAGE — 50 Marks

Question 1

**Write a composition in approximately 400 words in Hindi on any ONE of the
topics given below :—**

[20]

किसी **एक** विषय पर निबन्ध लिखिए जो लगभग **400** शब्दों से कम न हो :—

(i) निःस्वार्थ भाव से की गई सहायता से असीम आनंद तथा संतोष प्राप्त होता है। किसी ऐसी ही एक घटना का वर्णन कीजिए जब आपने अपनी परेशानियों की परवाह किए बिना किसी ज़रूरतमंद व्यक्ति की मदद की थी। यह भी स्पष्ट कीजिए कि इस अनुभव से आपके जीवन पर क्या प्रभाव पड़ा ?

(ii) "जल ही जीवन है। जल के बिना सुनहरे कल की कल्पना करना व्यर्थ है।" वर्तमान युग में जल संकट की समस्या किस प्रकार विकराल रूप लेती जा रही है ? जल संरक्षण की आवश्यकता तथा इसके विभिन्न उपायों पर प्रकाश डालते हुए अपने विचार प्रस्तुत कीजिए।

(iii) आपके विद्यालयी जीवन का यह अन्तिम वर्ष है। आज आपका विदाई समारोह आयोजित किया गया है। इतने वर्षों का मित्रों एवं अध्यापकों का साथ छूटने वाला है। इन बीते वर्षों के न भूलने वाले खट्टे-मीठे अनुभव लिखिए।

(iv) "मनुष्य के नैतिक उत्थान का जिम्मेदार परिवार एवं समाज है" — विषय के पक्ष या विपक्ष में अपने विचार व्यक्त कीजिए।

This Paper consists of 7 printed pages and 1 blank page.

(v) विश्व के मानचित्र पर भारत की एक नई पहचान उभर रही है, इसका कारण है "आज का जागरूक भारत"—व्याख्या कीजिए।

(vi) निम्नलिखित में से किसी **एक** पर मौलिक कहानी लिखिए :—

(a) "बीती ताहि बिसार दे आगे की सुध लेय।"

(b) एक मौलिक कहानी लिखिए जिसका अन्तिम वाक्य हो :

.... और अपने घर सकुशल पहुँचने पर हमने चैन की साँस ली।

Question 2

Read the passage given below carefully and answer in Hindi the questions that follow, using your own words :—

निम्नलिखित अवतरण को पढ़कर, अन्त में दिए गए प्रश्नों के उत्तर अपने शब्दों में लिखिए :—

पुराने समय की बात है, एक गाँव में दो किसान रहते थे। दोनों ही बहुत गरीब थे, दोनों के पास थोड़ी-थोड़ी ज़मीन थी, दोनों उसमें ही मेहनत करके अपना और अपने परिवार का गुजारा करते थे।

अकस्मात् कुछ समय पश्चात दोनों की एक ही दिन, एक ही समय पर मृत्यु हो गयी। यमराज दोनों को एक साथ भगवान के पास ले गए। भगवान ने उन्हें देख के उनसे पूछा, "तुम्हारे इस जीवन में क्या कमी थी ?" भगवान की बात सुनकर उनमें से एक किसान बड़े गुस्से से बोला, "हे भगवन् ! आपने इस जन्म में मुझे बहुत घटिया ज़िन्दगी दी थी। आपने कुछ भी नहीं दिया था मुझे। पूरी ज़िन्दगी मैंने बैल की तरह खेतों में काम किया, जो कुछ भी कमाया वह सब पेट भरने में लगा दिया, न ही मैं कभी अच्छे कपड़े पहन पाया और न ही कभी अपने परिवार को अच्छा खाना खिला पाया। जो भी पैसे कमाता था, कोई आकर मुझसे लेकर चला जाता था और मेरे हाथ में कुछ भी नहीं आया। देखो, कैसी जानवरों जैसी ज़िन्दगी जी है मैंने।"

उसकी बात सुनकर भगवान कुछ समय मौन रहे और पुनः उस किसान से पूछा, "तो अब तुम क्या चाहते हो, इस जन्म में मैं तुम्हें क्या बनाऊँ ?"

भगवान का प्रश्न सुनकर वह किसान पुनः बोला, "भगवन् ! आप कुछ ऐसा कर दीजिए, कि मुझे कभी किसी को कुछ भी देना ना पड़े। मुझे तो केवल चारों तरफ से पैसा ही पैसा मिले।"

अपनी बात कहकर वह किसान चुप हो गया। भगवान ने उसकी बात सुनी और कहा, "तथास्तु ! तुम अब जा सकते हो, मैं तुम्हें ऐसा ही जीवन दूँगा जैसा तुमने मुझसे माँगा है।''

उसके जाने के बाद भगवान ने दूसरे किसान से पूछा, "तुम बताओ, तुम्हारे जीवन में क्या कमी थी ?'' उस किसान ने भगवान के सामने हाथ जोड़ते हुए कहा, 'हे भगवन्। आपने मुझे सबकुछ दिया, मैं आपसे क्या माँगूँ। आपने मुझे एक अच्छा परिवार दिया, मुझे कुछ ज़मीन दी जिस पर मेहनत से काम करके मैंने अपने परिवार को एक अच्छा जीवन दिया। खाने के लिए आपने मुझे और मेरे परिवार को भरपेट भोजन दिया। मैं और मेरा परिवार कभी भूखे पेट नहीं सोया। बस एक ही कमी थी मेरे जीवन में, जिसका मुझे पूरी ज़िन्दगी अफ़सोस रहा और आज भी है। मेरे दरवाजे पर कभी कुछ भूखे और प्यासे लोग आते थे भोजन माँगने के लिए परन्तु कभी-कभी भोजन न होने के कारण मैं उन्हें खाना नहीं दे पाता था और वे मेरे द्वार से भूखे ही लौट जाते थे। ऐसा कहकर वह चुप हो गया।''

भगवान ने उसकी बात सुनकर उससे पूछा, "तो अब क्या चाहते हो तुम, इस जन्म में मैं तुम्हें क्या बनाऊँ ? किसान ने हाथ जोड़ते हुए भगवान से विनती की, 'हे प्रभु ! आप कुछ ऐसा कर दें कि मेरे द्वार से कोई भूखा-प्यासा ना जाए।'' भगवान ने कहा, "तथास्तु ! तुम जाओ तुम्हारे द्वार से कभी कोई भूखा-प्यासा नहीं जाएगा।''

अब दोनों का पुनः उसी गाँव में एक साथ जन्म हुआ। दोनों एक साथ बड़े हुए। पहला व्यक्ति जिसने भगवान से कहा था कि उसे चारों तरफ से केवल धन मिले और उसे कभी किसी को कुछ देना ना पड़े, वह व्यक्ति उस गाँव का सबसे बड़ा भिखारी बना। अब उसे किसी को कुछ देना नहीं पड़ता था और जो कोई भी आता उसकी झोली में पैसे डालकर ही जाता था।

दूसरा व्यक्ति जिसने भगवान से कहा था कि उसे कुछ नहीं चाहिए, केवल इतना हो जाए कि उसके द्वार से कभी कोई भूखा-प्यासा न जाए, वह उस गाँव का सबसे अमीर आदमी बना।

ईश्वर ने जो दिया है उसी में संतुष्ट रहना बहुत ज़रूरी है। अक्सर देखा जाता है कि सभी लोगों को हमेशा दूसरों की चीज़ें ज्यादा पंसद आती हैं और इसके चक्कर में वे अपना जीवन भी अच्छे से नहीं जी पाते। हर बात के दो पहलू होते हैं—सकारात्मक और नकारात्मक, अब ये हमारी सोच पर निर्भर है कि हम चीज़ों को नकारात्मक रूप से देखते हैं या सकारात्मक रूप से। अच्छा जीवन जीना है, तो अपनी सोच को अच्छा बनाना होगा। चीज़ों में कमियाँ निकालने की बजाय

भगवान ने जो दिया है उसका आनंद लेना और हमेशा दूसरों के प्रति सेवा भाव रखना होगा ! जिस दिन हमारी सोच बदलेगी, जीवन के प्रति हमारा दृष्टिकोण भी बदल जाएगा।

प्रश्न :—

(i) दोनों किसान कहाँ रहते थे ? उन दोनों में क्या समानताएँ एवं क्या विषमताएँ थीं ?   [4]

(ii) पहले किसान को अपने जीवन से क्या शिकायत थी ? वह दूसरे जन्म में क्या बनना चाहता था ?   [4]

(iii) दूसरे किसान ने भगवान से अपने लिए क्या माँगा और क्यों ?   [4]

(iv) दोनों किसानों का पुनर्जन्म किस रूप में हुआ ? अब उनका जीवन कैसा था ?   [4]

(v) इस गद्यांश से हमें क्या शिक्षा मिलती है ?   [4]

Question 3

(a) **Correct the following sentences and rewrite :—**   [5]

निम्नलिखित वाक्यों को शुद्ध करके लिखिए :—

(i) श्याम तेजी से दौड़ता है।

(ii) वह मेरे शब्दों पर ध्यान नहीं देता।

(iii) उसने गीत की दो-चार लड़ियाँ गाईं।

(iv) हत्यारे को मृत्युदण्ड की सजा मिली।

(v) हम हमारे देश के लिए जान दे देंगे।

(b) **Use the following idioms in sentences of your own to illustrate their meaning :—**   [5]

निम्नलिखित मुहावरों को वाक्यों में प्रयुक्त कीजिए :—

(i) हाथ तंग होना।

(ii) चुल्लू भर पानी में डूब मरना।

(iii) आसमान सिर पर उठाना।

(iv) कान भरना।

(v) इधर-उधर की हाँकना।

SECTION B

PRESCRIBED TEXTBOOKS — 50 Marks

Answer four questions from this Section on at least three of the prescribed textbooks.

गद्य संकलन (Gadya Sanklan)

Question 4

"जैसे भी हो, इस बार बेटू को अपने साथ लेकर ही जाना होगा। यही हाल रहा तो इसकी जिंदगी चौपट हो जाएगी। यह भी कोई ढंग है भला।''

(i) उक्त कथन कौन, किससे और किस संदर्भ में कह रहा है ?   [1½]

(ii) श्रोता उक्त कथन सुनकर धर्म-संकट में क्यों था ?   [3]

(iii) बेटू के आ जाने से अम्मा का जीवन किस तरह बीतता था ?   [3]

(iv) 'मजबूरी' कहानी के माध्यम से कहानीकारा पाठकों का ध्यान किस ओर आकृष्ट कर रही हैं ?   [5]

Question 5

"म्लेच्छों ने मुझे मुलतान की लूट में पकड़ लिया। मैं उनकी कठोरता में जीवित रहकर बराबर उनका विरोध ही करती रही।'' कथन के आधार पर इरावती की व्यथा का वर्णन करते हुए उसका चरित्र-चित्रण कीजिए।   [12½]

Question 6

"गौरी एक चरित्र प्रधान कहानी है''। कहानी के आधार पर गौरी की देशभक्ति एवं त्याग का वर्णन करते हुए बताइए कि गौरी का योगदान सीताराम जी की तुलना में कहीं कम नहीं था।   [12½]

काव्य मंजरी (Kavya Manjari)

Question 7

क्या हवाएँ थीं कि उजड़ा प्यार का वह आशियाना,
कुछ ना आया काम तेरा, शोर करना गुल मचाना,
माना कि उन शक्तियों के साथ चलता जोर किसका

किन्तु ऐ निर्माण के प्रतिनिधि, तुझे होगा बताना

जो बसे हैं, वो उजड़ते हैं, प्रकृति के जड़ नियम से,

पर किसी उजड़े हुए को, फिर बसाना कब मना है ?

है अँधेरी रात पर दीवा जलाना कब मना है ?

(i) प्रस्तुत पद्यांश के कवि तथा कविता का नाम लिखिए। यह किस प्रकार की कविता है ? [1½]

(ii) 'प्यार का आशियाना' कैसे उजड़ गया ? मनुष्य का शोरगुल मचाना काम क्यों नहीं आया ? [3]

(iii) 'निर्माण के प्रतिनिधि' किसे कहा गया है और क्यों ? 'प्रकृति का जड़ नियम' क्या है ? समझाइए। [3]

(iv) प्रस्तुत कविता से कवि क्या सन्देश देना चाहते हैं ? समझाकर लिखिए। [5]

Question 8

'एक फूल की चाह' कविता के माध्यम से कवि सियारामशरण गुप्तजी ने छुआछूत जैसी सामाजिक कुरीति पर कुठाराघात किया है। — सिद्ध कीजिए। [12½]

Question 9

'आ: धरती कितना देती है' का मूल प्रतिपाद्य लिखिए। प्रस्तुत कविता द्वारा कवि ने क्या सन्देश दिया है ? [12½]

'सारा आकाश' (Saara Akash)

Question 10

'तूने मुझे बचा लिया, वरना सच कहता हूँ कि पागल हो जाता। तू नहीं जानता, हमारे घर की हालत क्या है।'' मेरी समझ में नहीं आ रहा था कि कैसे अपनी कृतज्ञता को व्यक्त करूँ। मेरी आँखें भर आईं।

(i) उपन्यास तथा उपन्यासकार का नाम लिखिए। यह किस प्रकार का उपन्यास है ? [1½]

(ii) उपर्युक्त कथन का वक्ता कौन है ? वक्ता किसके प्रति आभारी है और क्यों ? [3]

(iii) वक्ता ने श्रोता से कितने रुपये उधार लिए और उन रुपयों से किसके लिए क्या खरीदा ? उसके बाद वक्ता जब घर पहुँचा तो घरवालों की क्या प्रतिक्रिया हुई ? [3]

(iv) श्रोता का चरित्र चित्रण कीजिए। [5]

Question 11

'सारा आकाश' उपन्यास के आधार पर समर के बाबूजी का चरित्र-चित्रण कीजिए। [12½]

Question 12

'सारा आकाश' राजेन्द्र यादव द्वारा लिखित एक उद्देश्यपूर्ण रचना है।' — उपन्यास के आधार पर
इस कथन की व्याख्या कीजिए। [12½]

'आषाढ़ का एक दिन' (Aashad Ka Ek Din)

Question 13

विलोम क्या है ? एक असफल कालिदास। और कालिदास ? एक असफल विलोम। हम कहीं एक-दूसरे
के बहुत निकट पड़ते हैं।

(i) वक्ता और श्रोता का परिचय दीजिए। [1½]

(ii) प्रस्तुत संवाद का प्रसंग स्पष्ट कीजिए। [3]

(iii) उपर्युक्त पंक्तियों के आधार पर वक्ता का दृष्टिकोण स्पष्ट कीजिए। [3]

(iv) उपर्युक्त संवाद के आधार पर बताइए कि विलोम और कालिदास के बीच कैसे संबंध थे ? [5]

Question 14

"अम्बिका भावनाओं में नहीं यथार्थ में जीती है।'' 'आषाढ़ का एक दिन' नाटक के आधार पर
अम्बिका की चारित्रिक विशेषताओं का वर्णन कीजिए। [12½]

Question 15

प्रियंगुमंजरी मल्लिका को अपने साथ चलने के लिए क्यों कहती है ? मल्लिका की इस पर क्या प्रतिक्रिया
थी ? [12½]

MATHEMATICS

(Maximum Marks: 100)

(Time allowed: Three hours)

*(Candidates are allowed additional 15 minutes for **only** reading the paper.*

They must NOT start writing during this time.)

This Question Paper consists of three sections A, B and C.

*Candidates are required to attempt all questions from **Section A** and all questions*

EITHER *from **Section B** **OR** **Section C***

Section A: *Internal choice has been provided in three questions of four marks each and two questions of six marks each.*

Section B: *Internal choice has been provided in two questions of four marks each.*

Section C: *Internal choice has been provided in two questions of four marks each.*

All working, including rough work, should be done on the same sheet as, and adjacent to the rest of the answer.

The intended marks for questions or parts of questions are given in brackets [ ].
Mathematical tables and graph papers are provided.

SECTION A (80 Marks)

Question 1   [10×2]

(i)   Determine whether the binary operation $*$ on R defined by $a*b = |a-b|$ is commutative. Also, find the value of $(-3)*2$.

(ii)   Prove that:

$\tan^2(\sec^{-1} 2) + \cot^2 (\operatorname{cosec}^{-1} 3) = 11$.

(iii)   Without expanding at any stage, find the value of the determinant:

$$\Delta = \begin{vmatrix} 20 & a & b+c \\ 20 & b & a+c \\ 20 & c & a+b \end{vmatrix}$$

(iv)   If $\begin{pmatrix} 2 & 3 \\ 5 & 7 \end{pmatrix}\begin{pmatrix} 1 & -3 \\ -2 & 4 \end{pmatrix} = \begin{pmatrix} -4 & 6 \\ -9 & x \end{pmatrix}$, find x.

(v)   Find $\dfrac{dy}{dx}$ if $x^3 + y^3 = 3axy$

(vi) The edge of a variable cube is increasing at the rate of 10 cm/sec. How fast is the volume of the cube increasing when the edge is 5 cm long?

(vii) Evaluate: $\int_{4}^{5} |x-5| dx$

(viii) Form a differential equation of the family of the curves $y^2 = 4ax$.

(ix) A bag contains 5 white, 7 red and 4 black balls. If four balls are drawn one by one with replacement, what is the probability that none is white?

(x) Let A and B be two events such that

$$P(A) = \frac{1}{2}, P(B) = p \text{ and } P(A \cup B) = \frac{3}{5}$$

find 'p' if A and B are independent events.

Question 2 [4]

If the function $f: R \to R$ be defined as $f(x) = \frac{3x+4}{5x-7}, \left(x \neq \frac{7}{5}\right)$ and

g: $R \to R$ be defined as $g(x) = \frac{7x+4}{5x-3}, \left(x \neq \frac{3}{5}\right)$

show that $(g \circ f)(x) = (f \circ g)(x)$.

Question 3 [4]

(a) If $\cos^{-1} \frac{x}{2} + \cos^{-1} \frac{y}{3} = \theta$, then prove that

$$9x^2 - 12xy \cos\theta + 4y^2 = 36 \sin^2\theta$$

OR

(b) Evaluate: $\cos\left(2\cos^{-1} x + \sin^{-1} x\right)$ at $x = \frac{1}{5}$.

Question 4 [4]

Using properties of determinants, show that

$$\begin{vmatrix} x & p & q \\ p & x & q \\ q & q & x \end{vmatrix} = (x-p)(x^2 + px - 2q^2)$$

2

Question 5 [4]

Verify Rolle's theorem for the function, $f(x) = -1 + \cos x$ in the interval $[0, 2\pi]$

Question 6 [4]

If $y = e^{m\sin^{-1} x}$, prove that

$$\left(1 - x^2\right)\frac{d^2 y}{dx^2} - x\frac{dy}{dx} = m^2 y$$

Question 7 [4]

(a) The equation of tangent at (2, 3) on the curve $y^2 = px^3 + q$ is $y = 4x - 7$. Find the values of 'p' and 'q'.

OR

(b) Using L'Hospital's rule, evaluate:

$$\lim_{x \to 0} \frac{xe^x - \log(1 + x)}{x^2}$$

[4]

Question 8 [4]

(a) Evaluate: $\displaystyle\int \frac{dx}{\sqrt{5x - 4x^2}}$

OR

(b) Evaluate: $\displaystyle\int \sin^3 x \, \cos^4 x \, dx$

Question 9 [4]

Solve the differential equation

$$\left(1 + x^2\right)\frac{dy}{dx} = 4x^2 - 2xy$$

[4]

Question 10

Three persons A, B and C shoot to hit a target. Their probabilities of hitting the target are $\dfrac{5}{6}$, $\dfrac{4}{5}$ and $\dfrac{3}{4}$ respectively. Find the probability that:

(i) Exactly two persons hit the target.

(ii) At least one person hits the target.

Turn over

Question 11 [6]

Solve the following system of linear equations using matrices:

$$x - 2y = 10, \quad 2x - y - z = 8, \quad -2y + z = 7$$

Question 12 [6]

(a) Show that the radius of a closed right circular cylinder of given surface area and maximum volume is equal to half of its height.

OR

(b) Prove that the area of right-angled triangle of given hypotenuse is maximum when the triangle is isosceles.

Question 13 [6]

(a) Evaluate:

$$\int \tan^{-1} \sqrt{\frac{1-x}{1+x}} \, dx$$

OR

(b) Evaluate: $\int \dfrac{2x+7}{x^2 - x - 2} \, dx$

Question 14 [6]

The probability that a bulb produced in a factory will fuse after 150 days of use is $0 \cdot 05$. Find the probability that out of 5 such bulbs:

(i) None will fuse after 150 days of use.

(ii) Not more than one will fuse after 150 days of use.

(iii) More than one will fuse after 150 days of use.

(iv) At least one will fuse after 150 days of use.

SECTION B (20 Marks)

Question 15 [3×2]

(a) Write a vector of magnitude of 18 units in the direction of the vector $\hat{\imath} - 2\hat{\jmath} - 2\hat{k}$.

(b) Find the angle between the two lines:

$$\frac{x+1}{2} = \frac{y-2}{5} = \frac{z+3}{4} \quad \text{and} \quad \frac{x-1}{5} = \frac{y+2}{2} = \frac{z-1}{-5}$$

(c) Find the equation of the plane passing through the point $(2, -3, 1)$ and perpendicular to the line joining the points $(4, 5, 0)$ and $(1, -2, 4)$.

4

Question 16 [4]

(a) Prove that $\vec{a} \cdot \left[(\vec{b} + \vec{c}) \times (\vec{a} + 3\vec{b} + 4\vec{c}) \right] = [\, \vec{a} \quad \vec{b} \quad \vec{c} \,]$

<div align="center">OR</div>

(b) Using vectors, find the area of the triangle whose vertices are:
<div align="center">A (3,−1, 2),   B (1,−1,−3)   and   C (4,−3, 1)</div>

Question 17 [4]

(a) Find the image of the point (3,−2, 1) in the plane $3x - y + 4z = 2$

<div align="center">OR</div>

(b) Determine the equation of the line passing through the point $(-1, 3, -2)$ and perpendicular to the lines:

$$\frac{x}{1} = \frac{y}{2} = \frac{z}{3} \quad \text{and} \quad \frac{x+2}{-3} = \frac{y-1}{2} = \frac{z+1}{5}$$

Question 18 [6]

Draw a rough sketch of the curves $y^2 = x$ and $y^2 = 4 - 3x$ and find the area enclosed between them.

<div align="center">

SECTION C (20 Marks)

</div>

Question 19 [3×2]

(a) The selling price of a commodity is fixed at ₹ 60 and its cost function is

C $(x) = 35\,x + 250$

    (i)   Determine the profit function.

    (ii) Find the break even points.

(b) The revenue function is given by $R(x) = 100x - x^2 - x^3$. Find

    (i)   The demand function.

    (ii) Marginal revenue function.

(c) For the lines of regression $4x - 2y = 4$ and $2x - 3y + 6 = 0$,
find the mean of 'x' and the mean of 'y'.

<div align="center">5</div>

Question 20

[4]

(a) The correlation coefficient between x and y is 0.6. If the variance of x is 225 , the variance of y is 400 , mean of x is 10 and mean of y is 20 , find

(i) the equations of two regression lines.

(ii) the expected value of y when $x = 2$

OR

(b) Find the regression coefficients b_{yx} , b_{xy} and correlation coefficient 'r' for the following data : (2,8), (6,8), (4,5), (7, 6), (5, 2)

Question 21

[4]

(a) The marginal cost of the production of the commodity is $30 + 2x$, it is known that fixed costs are ₹ 200, find

(i) The total cost.

(ii) The cost of increasing output from 100 to 200 units.

OR

(b) The total cost function of a firm is given by $C(x) = \frac{1}{3} x^3 - 5x^2 + 30\,x - 15$ where the selling price per unit is given as ₹ 6 . Find for what value of x will the profit be maximum.

Question 22

[6]

A company uses three machines to manufacture two types of shirts , half sleeves and full sleeves. The number of hours required per week on machine M_1 , M_2 and M_3 for one shirt of each type is given in the following table :

	M_1	M_2	M_3
Half sleeves	1	2	8/5
Full sleeves	2	1	8/5

None of the machines can be in operation for more than 40 hours per week . The profit on each half sleeve shirt is ₹ 1 and the profit on each full sleeve shirt is ₹1·50. How many of each type of shirts should be made per week to maximixe the company's profit?

6

PHYSICS

PAPER – 1

(THEORY)

(Maximum Marks: 70)

(Time allowed: Three hours)

*(Candidates are allowed additional 15 minutes for **only** reading the paper.
They must NOT start writing during this time.)*

All questions are compulsory.
This question paper is divided into 4 Sections, A, B, C and D as follows:
Section A
Question number 1 is of twelve marks. All parts of this question are compulsory.
Section B
Question numbers 2 to 12 carry 2 marks each with two questions having internal choice.
Section C
Question numbers 13 to 19 carry 3 marks each with two questions having internal choice.
Section D
*Question numbers 20 to 22 are long-answer type questions and carry 5 marks each.
Each question has an internal choice.*
The intended marks for questions are given in brackets [ ].
*All working, including rough work, should be done on the same sheet as and
adjacent to the rest of the answer.*
*Answers to sub parts of the same question must be given in one place only. A list of
useful physical constants is given at the end of this paper.*
*A simple scientific calculator without a programmable memory may be used for
calculations.*

Section A

*Answer **all** questions.*

Question 1

(A) Choose the correct alternative (a), (b), (c) or (d) for each of the questions given **[5×1]**
below:

(i) A point charge 'q' is kept at each of the vertices of an equilateral triangle
having each side 'a'. Total electrostatic potential energy of the system
is:

(a) $\left(\dfrac{1}{4\pi\varepsilon_o}\right)\dfrac{3q^2}{a^2}$ (b) $\left(\dfrac{1}{4\pi\varepsilon_o}\right)\dfrac{3q}{a}$

(c) $\left(\dfrac{1}{4\pi\varepsilon_o}\right)\dfrac{3q^2}{a}$ (d) $\left(\dfrac{1}{4\pi\varepsilon_o}\right)\dfrac{3q}{a^2}$

This Paper consists of 8 printed pages.

(ii) **Curie** temperature is the temperature above which:

    (a)   a ferromagnetic substance behaves like a paramagnetic substance.

    (b)   a paramagnetic substance behaves like a diamagnetic substance.

    (c)   a ferromagnetic substance behaves like a diamagnetic substance.

    (d)   a paramagnetic substance behaves like a ferromagnetic substance.

(iii) In an **astronomical telescope** of **refracting** type:

    (a)   Objective should have small focal length.

    (b)   Objective should have large focal length.

    (c)   Eyepiece should have large focal length.

    (d)   Both objective and eyepiece should have large focal length.

(iv) In **photoelectric effect** experiment, the slope of the graph of the **stopping potential** versus **frequency** gives the value of:

    (a) $\dfrac{h}{e}$ (b) h

    (c) $\dfrac{e}{h}$ (d) $\dfrac{hc}{e}$

(v) In a nuclear reactor, **cadmium** rods are used as:

    (a)   Control rods

    (b)   Fuel rods

    (c)   Coolant

    (d)   Moderator

(B) Answer the following questions **briefly** and to the point: [7×1]

(i) State **Gauss'** theorem.

(ii) A metallic wire having a resistance of 20Ω is bent in order to form a complete circle. Calculate the resistance between *any two* diametrically opposite points on the circle.

(iii) How can a moving coil galvanometer be converted into a **voltmeter**?

(iv) Write **Biot-Savart's law** in vector form.

(v) What is the **phase difference** between *any two* points lying on the **same** wavefront?

(vi) Name the physical **principle** on the basis of which **optical fibres** work.

(vii) What is *Pair production*?

2

Question 2

[2]

(a) A uniform copper wire having a cross sectional area of 1mm² carries a current of 5A. Calculate the **drift speed** of free electrons in it.
(Free electron number density of copper = 2×10^{28}/m³.)

OR

(b) An electric bulb is rated as 250V, 750W. Calculate the:

(i) Electric current flowing through it, when it is operated on a 250V supply.

(ii) Resistance of its filament.

Question 3

[2]

Write an expression for **force per unit length** between two long current carrying wires, kept parallel to each other, in vacuum and hence define an **ampere,** the SI unit of current.

Question 4

[2]

(i) Define *angle of dip*.

(ii) State the relation between **magnetic susceptibility** (χ) and

relative permeability (μ_r) of a magnetic substance.

Question 5

[2]

(a) *Figure 1* below shows a metallic rod MN of length $l = 80$cm, kept in a uniform magnetic field of flux density B = 0·5T, on two parallel metallic rails **P** and **Q**. Calculate the emf that will be induced between its two ends, when it is moved towards right with a constant velocity v of 36 km/hr.
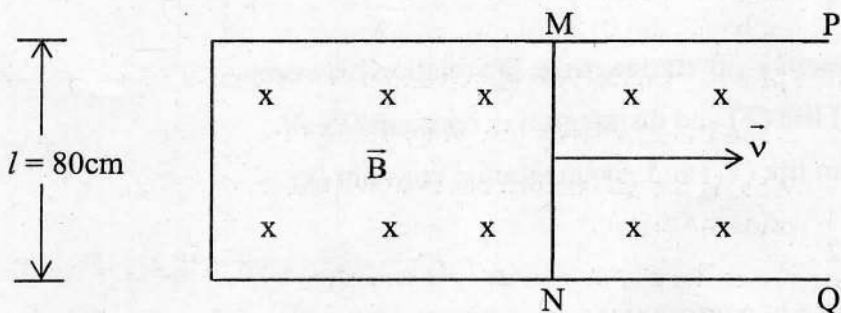

Figure 1

OR

(b) When current flowing through one coil changes from 0 Amp to 15 Amp in 0·2 s, an emf of 750V is induced in an adjacent coil. Calculate the coefficient of mutual inductance of the two coils.

Question 6 [2]

(i) State *any one* use of **infrared** radiations.

(ii) State *any one* source of **ultraviolet** radiations.

Question 7 [2]

Where will you keep an object in front of a:

(i) Convex lens in order to get a **virtual** and **magnified** image?

(ii) Concave mirror to get a **real** and **diminished** image?

Question 8 [2]

Draw a **labelled** graph of angle of deviation (δ) versus angle of incidence (i) for a prism.

Question 9 [2]

(i) State **de Broglie** hypothesis.

(ii) What conclusion can be drawn from **Davisson** and **Germer's** experiment?

Question 10 [2]

Calculate binding energy of oxygen nucleus $\left({}^{16}_{8}O \right)$ from the data given below:

Mass of a proton	=	1·007825u
Mass of a neutron	=	1·008665u
Mass of $\left({}^{16}_{8}O \right)$	=	15·994915u

Question 11 [2]

For a **radioactive substance**, write the relation between:

(i) Half life (T) and disintegration constant (λ).

(ii) Mean life (τ) and disintegration constant (λ).

Question 12 [2]

With reference to **communication systems**, what is meant by:

(i) modulation?

(ii) demodulation?

4

Section C

Answer all questions.

Question 13 [3]

Show that intensity of electric field **E** at a point in **broadside on** position is given by:

$$E = \left(\frac{1}{4\pi \epsilon_o}\right)\frac{p}{\left(r^2 + l^2\right)^{3/2}},$$

where the terms have their usual meaning.

Question 14 [3]

A **parallel plate capacitor** is charged by a battery, which is then disconnected. A dielectric slab having **dielectric constant** (relative permittivity) K, is now introduced between its two plates in order to occupy the space completely.
State, in terms of K, its effect on the following:

(i)   The capacitance of the capacitor.

(ii)   The potential difference between its plates.

(iii)   The energy stored in the capacitor.

Question 15 [3]

(a) E_1 and E_2 are two batteries having emfs of 3V and 4V and internal resistances of 2Ω and 1Ω respectively. They are connected as shown in *Figure 2* below. Using **Kirchhoff's Laws** of electrical circuits, calculate the currents I_1 and I_2.
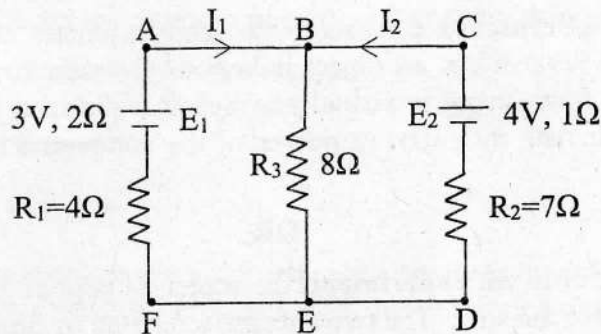

Figure 2

OR

(b)   A **potentiometer** circuit is shown in *Figure 3* below. AB is a uniform metallic wire having length of 2m and resistance of 8Ω. The batteries E_1 and E_2 have emfs of 4V and 1·5V and their internal resistances are 1Ω and 2Ω respectively.
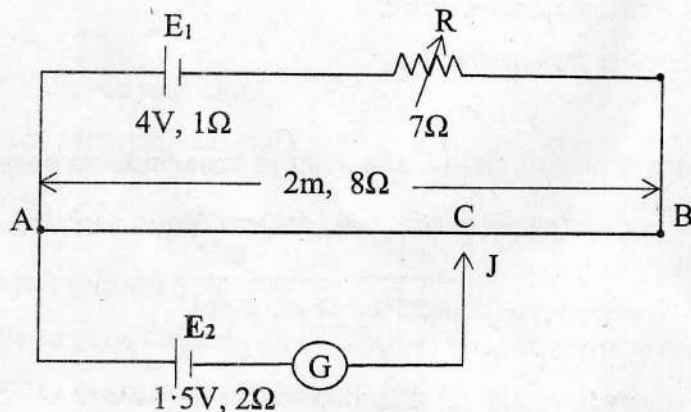

Figure 3

(i)   When the jockey J does not touch the wire AB, calculate:

(a)   the current flowing through the potentiometer wire AB.

(b)   the potential gradient across the wire AB.

(ii)   Now the jockey J is made to touch the wire AB at a point C such that the galvanometer (G) shows no deflection. Calculate the length AC.

Question 16   [3]

For two **thin lenses** kept in **contact** with each other, show that:

$$\frac{1}{F} = \frac{1}{f_1} + \frac{1}{f_2}$$

where the terms have their usual meaning.

Question 17   [3]

(a)   A **compound microscope** consists of two convex lenses having focal length of 1·5cm and 5cm. When an object is kept at a distance of 1·6cm from the objective, the final image is virtual and lies at a distance of 25cm from the eyepiece. Calculate **magnifying power** of the compound microscope in this set-up.

OR

(b)   In **Young's double slit experiment**, the screen is kept at a distance of 1·2m from the plane of the slits. The two slits are separated by 5mm and illuminated with monochromatic light having wavelength 600nm. Calculate:

(i)   Fringe width i.e. fringe separation of the interference pattern.

(ii)   Distance of 10th bright fringe from the centre of the pattern.

6

Question 18   [3]

Draw the **energy level diagram** of hydrogen atom and show the transitions responsible for:

(i)   absorption lines of **Lyman** series.

(ii)   emission lines of **Balmer** series.

Question 19   [3]

(i)   State *any one* difference between energy band diagram of conductors and that of insulators.

(ii)   Give a relation between α and β for a transistor.
        (Derivation is **not** required.)

(iii)   What is the **advantage** of an LED bulb over the filament electric bulb?

Section D

Answer all questions.

Question 20   [5]

(a)   (i)   A 400Ω resistor, a $3H$ inductor and a $5\mu F$ capacitor are connected in series to a 220V, 50Hz ac source. Calculate the:

            (1)   Impedance of the circuit.

            (2)   Current flowing through the circuit.

      (ii)   Draw a **labelled** graph showing the variation of **impedance** (Z) of a series LCR circuit versus **frequency** (f) of the ac supply.

OR

(b)   (i)   When an alternating emf $e = 310 \sin (100\pi t)$V is applied to a series LCR circuit, current flowing through it is $i = 5 \sin(100\pi t + \pi/3)$A.

            (1)   What is the **phase difference** between the current and the emf?

            (2)   Calculate the **average power** consumed by the circuit.

      (ii)   Obtain an expression for the **resonant** frequency (f_0) of a series LCR circuit.

Question 21   [5]

(a)   (i)   **Derive** an expression for refraction at a single (convex) spherical surface, i.e. a relation between u, v, R, n_1 (rarer medium) and n_2 (denser medium), where the terms have their usual meaning.

      (ii)   Name the **phenomenon** due to which the sun appears reddish at sunset.

OR

7

(b) (i) Draw a **labelled** graph of intensity of diffracted light (I) versus angle (θ) in the **Fraunhofer** diffraction experiment for a single slit diffraction.

(ii) State the law of **Malus**.

(iii) How will you distinguish **experimentally** between ordinary light and plane polarized light?

Question 22 [5]

(a) (i) In a semiconductor diode, what is meant by **potential barrier**?

(ii) Draw a **labelled** circuit diagram of a **Zener** diode as a **voltage regulator**.

(iii) Show with the help of a diagram, how you will obtain an **AND** gate using only **NAND** gates. (Truth table is **not** required.)

OR

(b) (i) Draw a **labelled** circuit diagram of a transistor acting as a **common emitter amplifier**. What is meant by *phase reversal*?

(ii) Draw the symbol of a **NAND** gate and write its truth table.

Useful Constant and Relation:

1u	=	931MeV

CHEMISTRY
PAPER – 1
(THEORY)
(Maximum marks: 70)
(Time allowed: Three hours)

*(Candidates are allowed additional 15 minutes for **only** reading the paper.*
They must NOT start writing during this time.)

All questions are compulsory

Question 1 is of 20 marks having four sub parts, all of which are compulsory.
*Question numbers 2 to 8 carry 2 marks each, with **two** questions having internal choice.*
*Question numbers 9 to 15 carry 3 marks each, with **two** questions having an internal choice.*

Question numbers 16 to 18 carry 5 marks each, with an internal choice.
All working, including rough work, should be done on the same sheet as, and adjacent to the rest of the answer.

The intended marks for questions or parts of questions are given in brackets [ ].
Balanced equations must be given wherever possible and diagrams where they are helpful.
When solving numerical problems, all essential working must be shown.
In working out problems, use the following data:
Gas constant $R = 1 \cdot 987$ cal $deg^{-1} mol^{-1} = 8 \cdot 314$ $JK^{-1} mol^{-1} = 0 \cdot 0821$ dm^3 atm $K^{-1} mol^{-1}$
$1\ l$ atm $= 1\ dm^3$ atm $= 101 \cdot 3\ J.$ 1 Faraday $= 96500$ coulombs.
Avogadro's number $= 6 \cdot 023 \times 10^{23}$.

Question 1

(a) Fill in the blanks by choosing the appropriate word/words from those given in the   **[4×1]**
brackets:

(iodoform, volume, mass, haloform, gram equivalent, chloroform, carbylamine, sp^3d^2, high, coke, d^2sp^3, low, gram mole, carbon monoxide)

(i) Equivalent conductivity is the conducting power of all the ions furnished by one _____ of an electrolyte present in a definite _____ of the solution.

(ii) Bleaching powder, on treatment with ethanol or acetone gives _____. This is an example of _____ reaction.

(iii) Outer orbital complexes involve _____ hybridization and are _____ spin complexes.

(iv) Zinc oxide is reduced by _____ at 1673K to form zinc and _____.

This Paper consists of 7 printed pages and 1 blank page.

Turn over

(b) Select the correct alternative from the choices given: [4×1]

(i) The packing efficiency of simple cubic structure, body centered cubic structure and face centered cubic structure respectively is:

(1) 52·4%, 74%, 68%

(2) 74%, 68%, 52·4%

(3) 52·4%, 68%, 74%

(4) 68%, 74%, 52·4%

(ii) When acetone is treated with Grignard's reagent, followed by hydrolysis, the product formed is:

(1) Secondary alcohol

(2) Tertiary alcohol

(3) Primary alcohol

(4) Aldehyde

(iii) Which of the following electrolytes is least effective in causing flocculation of positively charged ferric hydroxide sol?

(1) $K_3[Fe(CN)_6]$

(2) K_2CrO_4

(3) $K_4[Fe(CN)_6]$

(4) KBr

(iv) On heating an aliphatic primary amine with chloroform and alcoholic potassium hydroxide, the organic compound formed is an:

(1) Alkyl isocyanide

(2) Alkanol

(3) Alkanal

(4) Alkyl cyanide

(c) Match the following: [4×1]

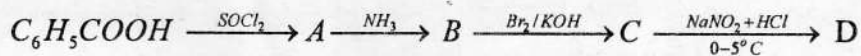|			
(i)	Silicon and phosphorous	(a)	Acetaldehyde
(ii)	Iodoform test	(b)	Xenon hexafluoride
(iii)	Arrhenius equation	(c)	n-type of semiconductors
(iv)	Distorted octahedral structure	(d)	Frequency factor

2

(d) Answer the following questions: [4×2]

(i) What is the common name of the polymer obtained by the polymerization of caprolactam? Is it addition polymer or condensation polymer?

(ii) Why Zn^{2+} ions are colourless while Ni^{2+} ions are green and Cu^{2+} ions are blue in colour?

(iii) The molar conductivity of NaCl, CH_3COONa and HCl at infinite dilution is 126·45, 91·0 and 426·16 ohm^{-1} cm^2 mol^{-1} respectively. Calculate the molar conductivity (λ_m^∞) for CH_3COOH at infinite dilution.

(iv) Identify the compounds A, B, C and D.

$$C_6H_5COOH \xrightarrow{SOCl_2} A \xrightarrow{NH_3} B \xrightarrow{Br_2/KOH} C \xrightarrow[0-5°C]{NaNO_2+HCl} D$$

Question 2 [2]

(a) An element has atomic weight 93 g mol^{-1} and density 11·5 g cm^{-3}. If the edge length of its unit cell is 300 pm, identify the type of unit cell.
($N_A = 6·023×10^{23}$ mol^{-1})

OR

(b) Calculate the radius of copper atom. The atomic weight of copper is 63·55 g mol^{-1}. It crystallises in face centered cubic lattice and has density of 8·93 g cm^{-3} at 298K.
($N_A = 6·023×10^{23}$ mol^{-1})

Question 3 [2]

Complete and balance the following chemical equations:

(i) $P_4 + NaOH + H_2O \xrightarrow[\text{Inert atm.}]{heat}$ _____ + _____

(ii) $Cu + HNO_3 \xrightarrow{}$ _____ + _____ + _____
  dil.

Question 4 [2]

(i) Write the chemical equation for the reaction of glucose with bromine water.

(ii) Write the zwitter ion structure of glycine.

Question 5 [2]

(i) How do antiseptics differ from disinfectants?

(ii) Name a substance that can be used as an antiseptic as well as a disinfectant.

Turn over

Question 6 [2]

An alloy of gold (Au) and cadmium (Cd) crystallises with a cubic structure in which gold atoms occupy the corners and cadmium atoms fit into the face centres. What is the formula of this alloy?

Question 7 [2]

(a)   State reasons for the following:

   (i)   Ethylamine is soluble in water whereas aniline is insoluble in water.

   (ii)   Aliphatic amines are stronger bases than aromatic amines.

OR

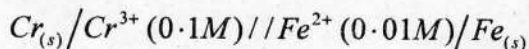(b)   Complete and balance the following equations:

   (i) $C_6H_5NH_2 + CH_3COCl \longrightarrow$ _____ + _____

   (ii) $C_2H_5NH_2 + HNO_2 \longrightarrow$ _____ + _____ + _____

Question 8 [2]

Draw the structure of xenon tetrafluoride molecule. State the hybridisation of the central atom and the geometry of the molecule.

Question 9 [3]

(a)   Calculate the emf and ΔG for the given cell at 25°C:

$$Cr_{(s)}/Cr^{3+} (0 \cdot 1M)//Fe^{2+} (0 \cdot 01M)/Fe_{(s)}$$

Given: $E^o_{Cr^{3+}/Cr} = -0 \cdot 74V$, $E^o_{Fe^{2+}/Fe} = -0 \cdot 44V$

$(1F = 96500 \text{ C}, R = 8 \cdot 314 \text{ JK}^{-1} \text{ mol}^{-1})$

OR

(b)   Calculate the degree of dissociation ($\propto$) of acetic acid, if its molar conductivity (Λ_m) is $39 \cdot 05$ S cm^2 mol^{-1}

(Given $\lambda^o_{(H^+)} = 349 \cdot 6$ S cm^2 mol^{-1} and $\lambda^o_{(CH_3COO^-)} = 40 \cdot 95$ S cm^2 mol^{-1})

Question 10 [3]

Name an important ore of silver. How is silver extracted from its sulphide ore? Give balanced chemical equations involved in the extraction of pure silver.

4

Question 11   [3]

How will you convert the following:

(i)   Chlorobenzene to biphenyl

(ii)   Propene to 1- bromopropane

(iii)   Chlorobenzene to aniline

Question 12   [3]

Explain what is observed when:

(i)   A beam of light is passed through a colloidal solution.

(ii)   An electric current is passed through a colloidal solution.

(iii)   An electrolyte ($AlCl_3$) is added to a colloidal solution of arsenious sulphide (As_2S_3).

Question 13   [3]

(a)   How will you convert the following: (Give balanced equation)

(i)   Benzoyl chloride to benzaldehyde.

(ii)   Methyl chloride to acetic acid.

(iii)   Acetic acid to methane.

OR

(b)   A ketone A (C_4H_8O) which undergoes Iodoform reaction gives compound B on reduction. B on heating with conc.H_2SO_4 at 443 K gives a compound C which forms ozonide D. D on hydrolysis with Zn dust gives only E. Identify the compounds A to E. Write the Iodoform reaction with compound A.

Question 14   [3]

A first order reaction is 50% completed in 30 minutes at 300 K and in 10 minutes at 320K. Calculate the activation energy of the reaction. ($R = 8·314 \text{ JK}^{-1} \text{ mol}^{-1}$).

Question 15   [3]

Explain the following:

(i)   Transition metals and their compounds generally exhibit a paramagnetic behaviour.

(ii)   There is an increase in density of elements from titanium (Z=22) to copper (Z = 29) in the 3d series of transition elements.

(iii) $K_2Cr_2O_7$ acts as a powerful oxidising agent in acidic medium.

Question 16   **[5]**

(a)   (i)   The elevation in boiling point when 0·30 g of acetic acid is dissolved in 100 g of benzene is 0·0633°C. Calculate the molecular weight of acetic acid from this data. What conclusion can you draw about the molecular state of the solute in the solution?

(Given K_b for benzene = 2·53 K kg mol^{-1}, at. wt. of C = 12, H = 1, O = 16)

       (ii)   Determine the osmotic pressure of a solution prepared by dissolving 0·025 g of K_2SO_4 in 2 litres of water at 25°C, assuming that K_2SO_4 is completely dissociated.

(R = 0·0821 Lit-atm K^{-1} mol^{-1}, mol. wt. of K_2SO_4 = 174 g mol^{-1})

OR

(b)   (i)   An aqueous solution of a non-volatile solute freezes at 272·4 K, while pure water freezes at 273·0 K. Determine the following:

(Given K_f = 1·86 K kg mol^{-1}, K_b = 0·512 K kg mol^{-1} and vapour pressure of water at 298 K = 23·756 mm of Hg)

              (1)   The molality of solution

              (2)   Boiling point of solution

              (3)   The lowering of vapour pressure of water at 298 K

       (ii)   A solution containing 1·23g of calcium nitrate in 10g of water, boils at 100·975°C at 760 mm of Hg. Calculate the van't Hoff factor for the salt at this concentration.

(K_b for water = 0·52 K kg mol^{-1}, mol. wt. of calcium nitrate = 164 g mol^{-1})

Question 17   **[5]**

(a)   (i)   Write the IUPAC names of the following complexes:

              (1) $[Cu(NH_3)_4]SO_4$

              (2) $[Co(en)_2Cl_2]$

              (3) $K_3[Al(C_2O_4)_3]$

       (ii)   With reference to the coordination complex ion $[Fe(H_2O)_6]^{2+}$ answer the following: (at. no. of Fe = 26)

              (1)   Give the IUPAC name of the complex ion.

              (2)   What is the oxidation number of the central metal atom?

              (3)   How many unpaired electrons are there in the complex ion?

              (4)   State the type of hybridisation of the complex ion.

OR

(b)   (i)   Name of the type of isomerism exhibited by the following pairs of compounds:

(1) $[Co(ONO)(NH_3)_5]^{2+}$ and $[Co(NO_2)(NH_3)_5]^{2+}$

(2) $[Cr(H_2O)_4Cl_2]$ $Cl.2H_2O$ and $[Cr(H_2O)_5Cl]Cl_2.H_2O$

(3) $[Co(NH_3)_6]$ $[Cr(CN)_6]$ and $[Cr(NH_3)_6]$ $[Co(CN)_6]$

(ii)   Using the valence bond approach, predict the shape, hybridisation and magnetic behaviour of $[Ni(CO)_4]$.   (at. no. of Ni = 28)

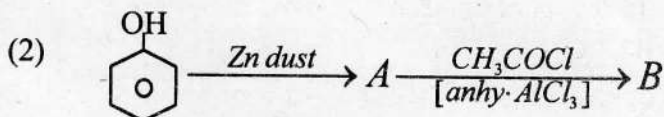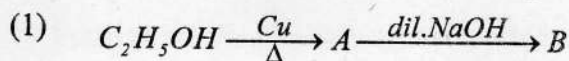## Question 18   [5]

(a)   (i)   Give balanced chemical equations for the following reactions:

(1)   Phenol is treated with ice cold alkaline solution of benzene diazonium chloride.

(2)   Diethyl ether is treated with phosphorous pentachloride.

(3)   Ethyl alcohol is treated with thionyl chloride.

(ii)   Give one chemical test each to distinguish between the following pairs of compounds:

(1)   Ethanol and dimethyl ether

(2)   Propan-1-ol and propan-2-ol

OR

(b)   (i)   Write chemical equations to illustrate the following name reactions:

(1)   Williamson's synthesis

(2)   Esterification reaction

(3)   Reimer-Tiemann reaction

(ii)   Identify the compounds A and B in the given reactions:

(1) $C_2H_5OH \xrightarrow[\Delta]{Cu} A \xrightarrow{dil.NaOH} B$

(2) $\xrightarrow{Zn\ dust} A \xrightarrow[[anhy.\ AlCl_3]]{CH_3COCl} B$

7

COMPUTER SCIENCE
PAPER 1
(THEORY)

(Maximum Marks: 70)

(Time allowed: Three hours)

*(Candidates are allowed additional 15 minutes for **only** reading the paper.*
They must NOT start writing during this time.)

----

*Answer **all** questions in Part I (compulsory) and **six** questions from Part-II, choosing **two**
questions from Section-A, **two** from Section-B and **two** from Section-C.*

*All working, including rough work, should be done on the same sheet as the
rest of the answer.*

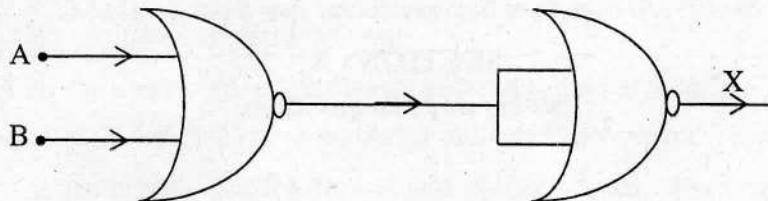*The intended marks for questions or parts of questions are given in brackets [ ].*

PART I (20 Marks)

*Answer **all** questions.*

**While answering questions in this Part, indicate briefly your working and reasoning,
wherever required.**

Question 1

(a)   State the properties of zero in Boolean algebra.   **[1]**

(b)   Find the complement of the following Boolean expression using   **[1]**
        De Morgan's law:

$$F(P,Q,R) = P + (Q' \cdot R)$$

(c)   Find the dual of: $(A' + 0) \cdot (B' + 1) = A'$ **[1]**

(d)   State whether the following proposition is a tautology, contradiction or a   **[1]**
        contingency:

$$F = (P => Q) \ V \ (Q => \sim P)$$

(e)   Study the diagram given below and answer the questions that follow: **[1]**

(i)   Name the basic gate which is represented by the diagram.

(ii)   What will be the value of X when A=1 and B=0 ?

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Turn over

Question 2

(a) State the difference between a *Binary Tree structure* and a *single Linked List*. [2]

(b) A matrix B[10][20] is stored in the memory with each element requiring 2 bytes of storage. If the base address at B[2][1] is 2140, find the address of B[5][4] when the matrix is stored in **Column Major Wise**. [2]

(c) Convert the following *infix notation* to *prefix* form: [2]

$$(X + Y) / (Z * W / V)$$

(d) State the best case and the worst case complexity for bubble sort algorithm. [2]

(e) What is the significance of the keyword '**new**' in Java? Mention the areas where it is used. [2]

Question 3

The following function **check( )** is a part of some class. What will the function check( ) return when the value of (i) **n=25** and (ii) **n=10**. Show the dry run/ working. [5]

```
int check(int n)
{   if(n<=1)
        return 1;
    if( n%2==0)
        return 1 + check(n/2);
    else
        return 1 + check(n/2 + 1);
}
```

PART – II (50 Marks)

*Answer **six** questions in this part, choosing **two** questions from Section A, **two** from Section B and **two** from Section C.*

SECTION - A

*Answer **any two** questions.*

Question 4

(a) Given the Boolean function: $F(A,B,C,D) = \Sigma (0, 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13,14)$.

(i) Reduce the above expression by using 4-variable Karnaugh map, showing the various groups (i.e. octal, quads and pairs). [4]

(ii) Draw the logic gate diagram for the reduced expression. Assume that the variables and their complements are available as inputs. [1]

2

(b) Given the Boolean function: **F(A, B, C, D) = π (3, 4, 6, 9, 11, 12, 13, 14, 15).**

    (i)   Reduce the above expression by using 4-variable Karnaugh map, showing the   **[4]** various groups (i.e. octal, quads and pairs).

    (ii)   Draw the logic gate diagram for the reduced expression. Assume that the   **[1]** variables and their complements are available as inputs.

Question 5

(a) Draw the logic circuit diagram for an octal to binary encoder and explain its working   **[5]** when a particular digit is pressed. Also, state the difference between *encoders* and *decoders*.

(b) Draw the circuit of a two input XOR gate with the help of NOR gates.   **[3]**

(c) Convert the following expression to its cardinal SOP form: **[2]**

$$F(P,Q,R) = P'Q'R + P'QR + PQ'R' + PQR'$$

Question 6

(a) A company intends to develop a device to show the high status power load for a   **[5]** household invertor depending on the criteria given below:

-     If Air conditioner and Geyser are on

               OR

-     If Air conditioner is off, but Geyser and Refrigerator are on

               OR

-     If Geyser is off, but Air conditioner and Water purifier are on

               OR

-     When all are on

The inputs are:

INPUTS	
A	Air conditioner is on
G	Geyser is on
R	Refrigerator is on
W	Water purifier is on

(In all the above cases 1 indicates yes and 0 indicates no.)

Output : **X** [1 indicates high power, 0 indicates low power for all cases]

Draw the truth table for the inputs and outputs given above and write the **SOP** expression for **X(A,G,R,W)**.

(b) Draw the truth table and derive an SOP expression for *sum* and *carry* for a full adder.   **[3]** Also, draw the logic circuit for the *carry* of a full adder.

(c) Simplify the following expression using Boolean laws: **[2]**

$$F = [(X' + Y) \cdot (Y' + Z)]' + (X' + Z)$$

---

*Answer **any two** questions.*

Each program should be written in such a way that it clearly depicts the logic of the problem. This can be achieved by using mnemonic names and comments in the program.

(Flowcharts and Algorithms are **not** required.)

The programs must be written in Java.

Question 7

Design a class **Convert** to find the date and the month from a given day number for a particular year. [10]

Example: If day number is 64 and the year is 2020, then the corresponding date would be:

March 4, 2020 i.e. $(31 + 29 + 4 = 64)$

Some of the members of the class are given below:

Class name	:	Convert

Data members/instance variables:

n	:	integer to store the day number
d	:	integer to store the day of the month (date)
m		integer to store the month
y	:	integer to store the year

Methods/Member functions:

Convert ( )	:	constructor to initialize the data members with legal initial values
void accept( )	:	to accept the day number and the year
void day_to_date( )	:	converts the day number to its corresponding date for a particular year and stores the date in 'd' and the month in 'm'
void display( )	:	displays the month name, date and year

Specify the class **Convert** giving details of the **constructor( )**, **void accept( )**, **void day_to_date( )** and **void display( )**. Define a **main( )** function to create an object and call the functions accordingly to enable the task.

Question 8

Design a class **BinSearch** to search for a particular value in an array. [10]

Some of the members of the class are given below:

Class name	:	BinSearch

Data members/instance variables:

arr[ ]	:	to store integer elements
n	:	integer to store the size of the array

Member functions/methods:

BinSearch(int nn)	:	parameterized constructor to initialize n=nn
void fillarray( )	:	to enter elements in the array

---

void sort( )	:	sorts the array elements in ascending order using any standard sorting technique
int bin_search(int l,int u,int v)	:	searches for the value 'v' using **binary search** and **recursive technique** and returns its location if found otherwise returns -1

Define the class **BinSearch** giving details of the **constructor( ), void fillarray( ), void sort( )** and **int bin_search(int,int,int)**. Define the **main( )** function to create an object and call the functions accordingly to enable the task.

Question 9

A class **Mix** has been defined to mix two words, character by character, in the following manner: [10]

The first character of the first word is followed by the first character of the second word and so on. If the words are of different length, the remaining characters of the longer word are put at the end.

Example: If the First word is "JUMP" and the second word is "STROLL", then the required word will be "JSUTMRPOLL"

Some of the members of the class are given below:

Class name	:	**Mix**

Data member/instance variable:

wrd	:	to store a word
len	:	to store the length of the word

Member functions/methods:

Mix( )	:	default constructor to initialize the data members with legal initial values
void feedword( )	:	to accept the word in UPPER case
void mix_word(Mix P, Mix Q)	:	mixes the words of objects P and Q as stated above and stores the resultant word in the current object
void display( )	:	displays the word

Specify the class **Mix** giving the details of the **constructor( ), void feedword( ), void mix_word(Mix, Mix)** and **void display( )**. Define the **main( )** function to create objects and call the functions accordingly to enable the task.

Each program should be written in such a way that it clearly depicts the logic of the problem stepwise.
This can be achieved by using comments in the program and mnemonic names or pseudo codes for algorithms. The programs must be written in Java and the algorithms must be written in general / standard form, wherever required / specified.
(Flowcharts are **not** required.)

Question 10

A Circular queue is a linear data structure which works on the principle of FIFO, enables the user to enter data from the rear end and remove data from the front end with the rear end connected to the front end to form a circular pattern. Define a class **CirQueue** with the following details:

Class name	:	**CirQueue**

Data members / instance variables:

cq[ ]	:	array to store the integers
cap	:	stores the maximum capacity of the array
front	:	to point the index of the front end
rear	:	to point the index of the rear end

Member functions:

CirQueue (int max)	:	constructor to initialize the data member cap=max, front=0 and rear=0
void push(int n)	:	to add integer in the queue from the rear end if possible, otherwise display the message "QUEUE IS FULL"
int pop( )	:	removes and returns the integer from the front end of the queue if any, else returns -9999
void show( )	:	displays the queue elements

(a) Specify the class **CirQueue** giving details of the functions **void push(int)** and **[4]** **int pop( ).** Assume that the other functions have been defined.

The main function and algorithm need NOT be written.

(b) How is a *linear queue structure* different from a *circular queue structure*? **[1]**

Question 11

An interface **Data** is defined with a data member and a method volume( ) which returns the **[5]** volume of the implementing shape. A super class **Base** has been defined to contain the radius of a geometrical shape. Define a sub class **CalVol** which uses the properties of the interface **Data** and the class **Base** and calculates the volume of a cylinder.

The details of the members of the interface and both the classes are given below:

Interface name	:	**Data**
Data member:		
double pi	:	initialize pi = 3.142
Member functions/methods:		
double volume( )	:	

Class name:		**Base**
Data member/instance variable:		
rad	:	to store the radius in decimal
Member functions/methods:		
Base(…)	:	parameterized constructor to initialize the data member
void show( )	:	displays the radius with an appropriate message
Class name:		**CalVol**
Data member/instance variable:		
ht	:	to store the height in decimal
Member functions/methods:		
CalVol(…)	:	parameterized constructor to initialize the data members of both the classes
double volume( )	:	calculates the volume of a sphere by using the formula (pi x radius^2 x height)
void show( )	:	displays the data members of both the classes and the volume of the sphere with appropriate message

*Assume that the interface **Data** and the super class **Base** has been defined*. Using the **concept of inheritance**, specify the class **CalVol** giving the details of the **constructor(…), double volume( )** and **void show( )**.

The interface, super class, main function and algorithm need NOT be written.

Question 12

(a) A linked list is formed from the objects of the class **Node**. The class structure of the   [2]
Node is given below:
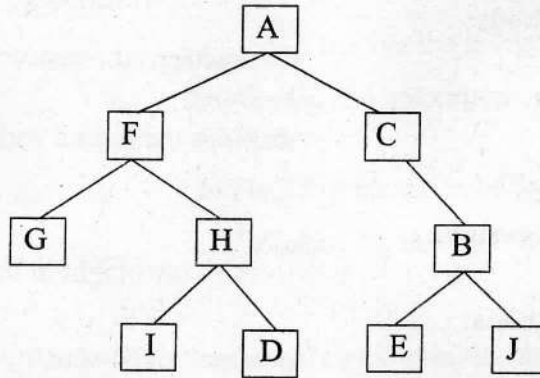
class   Node
{
    int n;
    Node next;
}

Write an *Algorithm* **OR** a *Method* to find the product of the integer numbers from an existing linked list.

The method declaration is as follows:

void Product_Node(Node str)

(b) Answer the following questions from the diagram of a Binary Tree given below:

(i) Write the *post-order* traversal of the left subtree of the above structure.   [1]

(ii) State the degree of the Nodes E and H.   [1]

(iii) Mention the external nodes of the right subtree.   [1]

8

HISTORY

(Maximum Marks: 80)

(Time allowed: Three hours)

*(Candidates are allowed additional 15 minutes for **only** reading the paper.*

They must NOT start writing during this time.)

----

*Answer **Question 1** (Compulsory) from **Part I** and **five** questions from **Part II**,*

*choosing **two** questions from **Section A**, **two** questions from **Section B***

*and **one** question from either **Section A** or **Section B**.*

The intended marks for questions or parts of questions are given in brackets [ ].

PART I (20 Marks)

*Answer **all** questions.*

Question 1
[20×1]

(i) Which political party formed ministries in a majority of the provinces after the elections of 1937?

(ii) What was the significance of the Lahore Session of the Muslim League (1940)?

(iii) Who was elected President of the All India Congress at the Haripura Session in 1938?

(iv) Name *any two* princely states that had not signed the Instrument of Accession Accord by 15th August, 1947.

(v) Which historical event posed the most serious threat to Indian democracy in 1975-76?

(vi) What is the significance of December 1963 in the history of Nagaland's demand for autonomy?

(vii) What was the most significant contribution of the Janata Party (1977 – 1979) to the changing face of Indian democracy?

(viii) Name the signatories of the Tashkent Declaration of 1966.

(ix) Which international movement was based on the principles of Panch Sheel?

(x) Mention *any one* social evil against which a campaign was launched by the Mahila Dakshita Party.

(xi) Which event transformed World War II into a global conflict?

(xii) Mention one tactical mistake made by Hitler during World War II.

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(xiii) State one important objective of the Hundred Flowers Campaign.

(xiv) Name the first Prime Minister of independent Kenya.

(xv) Why was the Berlin wall erected?

(xvi) What is meant by the term *détente*?

(xvii) Name the policies introduced in the USSR by Gorbachev.

(xviii) Why is the Civil Rights Act of 1964 considered a landmark in US legislation?

(xix) Name the book written by Betty Friedan that sparked off the second wave of American Feminism in the 20th century.

(xx) Explain the meaning of the term *Intifada*.

PART II (60 Marks)

*Answer **five** questions in all, choosing **two** questions from Section A, two questions from Section **B** and **one** question from either Section A or Section **B**.*

SECTION A

Question 2

(a) Give an account of the revival of the INA and its contribution to India's struggle for freedom under the leadership of Subhash Chandra Bose.   [6]

(b) State the main provisions of the Indian Independence Act.   [6]

Question 3

Discuss the linguistic reorganisation of states with reference to:

(a) Andhra   [6]

(b) Bombay   [6]

Question 4

With reference to India's foreign policy, discuss the following:

(a) The Kashmir problem and the outbreak of the Indo-Pak war of 1948-49.   [6]

(b) The consequences of the Indo-Pak war of 1971.   [6]

Question 5

Review the achievements and failures of the Janata Government (1977 – 1979).   [12]

Question 6

(a) What were the main features of the Towards Equality Report (1974)? [6]

(b) Briefly discuss the efforts made by various Women's Movements in India to root out the social evils of dowry and domestic violence. [6]

SECTION B

Question 7

(a) Discuss the significant changes in Mussolini's foreign policy after 1935, till the outbreak of World War II. [6]

(b) Why did Britain and France follow a policy of appeasement towards Germany and Italy? [6]

Question 8

In the context of the civil war and the establishment of the People's Republic in China, answer the following questions:

(a) State the causes of the victory of the Communists in the civil war in China in 1949. [6]

(b) What important economic changes were introduced by Mao Tse Tung under the Great Leap Forward? [6]

Question 9

The Cuban missile crisis led to an escalation of international tensions and pushed the world to brink of a nuclear war. Discuss. [12]

Question 10

In the context of protest movements in the USA, discuss the following:

(a) The significant change in the attitude of the government towards racial discrimination in USA. [6]

(b) The impact of the Presidential Commission on the Feminist Movement in USA (1960s – 1980s). [6]

Question 11

(a) To what extent was Nasser responsible for the Suez War of 1956? [6]

(b) State the consequences of Suez War of 1956. [6]

POLITICAL SCIENCE

(Maximum Marks: 80)

(Time allowed: Three hours)

*(Candidates are allowed additional 15 minutes for **only** reading the paper. They must NOT start writing during this time.)*

-----

*Answer **Question 1** (compulsory) from Part I, and **five** questions from Part II, choosing **three** questions from Section A and **two** questions from Section B. The intended marks for questions or parts of questions are given in brackets [ ].*

PART I (20 Marks)
*Answer **all** questions.*

Question 1

Answer briefly each of the questions **(i)** to **(x)**.   [10 × 2]

(i) Identify *two* key points of difference between a *parliamentary* and a *presidential* system.

(ii) Distinguish between a *written constitution* and an *unwritten constitution*.

(iii) State *two* reasons for the widespread acceptance of *Universal Adult Franchise*.

(iv) State one *electoral* function of the Parliament of India.

(v) Distinguish between the *political executive* and the *permanent executive*.

(vi) State one area where the Supreme Court of the United States exercises original jurisdiction.

(vii) State why the Indian constitution is characterised as *partly rigid and partly flexible*.

(viii) State *two Gandhian Directive Principles* that find a place in Part IV of the Constitution of India.

(ix) Which authority is charged with the conduct of local self-government elections under the 73rd Amendment to the Constitution of India?

(x) Briefly explain the meaning of *regionalism* in the Indian context.

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PART II (60 Marks)

SECTION A

*Answer **any three** questions.*

Question 2

(a) Distinguish between *totalitarian states* and *liberal democratic states*. [6]

(b) India is described as *a federal state with subsidiary unitary features*. Explain. [6]

Question 3

(a) Explain *three* functions of political parties. [6]

(b) Discuss *three* merits of a multi-party system. [6]

Question 4

(a) Explain *three* powers of the House of Representatives. [6]

(b) Discuss *three* ways in which the Lok Sabha exercises control over the executive. [6]

Question 5

(a) Critically examine the role of the President in the Constitution of India. [6]

(b) Briefly explain *three* functions of the *permanent executive* (civil service). [6]

Question 6

(a) Critically examine *judicial review* with reference to India. [6]

(b) With reference to the Supreme Court of the United States, explain *three* principles (maxims) of Judicial Review. [6]

Question 7

(a)   Explain *any three* Salient Features of the Constitution of India.   **[6]**

(b)   What rights are conferred under the *Right to Freedom of Religion* in Articles 25   **[6]**
       to 28 of the Constitution of India?

Question 8

(a)   Explain the composition of the Zila Parishads.   **[6]**

(b)   Discuss *three* challenges faced by urban local self-government institutions in ·   **[6]**
       India.

Question 9

(a)   Explain *three* ways in which communalism affects the functioning of Indian   **[6]**
       democracy.

(b)   Critically discuss the role of caste in Indian politics.   **[6]**

ACCOUNTS

(Maximum Marks: 80)

(Time allowed: Three hours)

(Candidates are allowed additional 15 minutes for **only** reading the paper.

They must NOT start writing during this time.)

Part I of Section A is Compulsory.

Answer **any 4** Questions from **Part II of Section A** and **any two** questions from **either Section B or Section C.**

The intended marks for questions or parts of questions are given in the brackets [ ].

Transactions should be recorded in the answer book.

All calculations should be shown clearly.

All working, including rough work, should be done on the same page as, and adjacent to, the rest of the answer.

SECTION A

PART I (12 Marks)

*Answer **all** questions.*

Question 1   [6 × 2]

Answer briefly each of the following questions:

(i)   Why is goodwill considered to be an intangible asset and not a fictitious asset?

(ii)   How will a firm deal with a situation when its partnership deed provides for interest on capital, but the profit earned by it is not enough to do so, at the rate mentioned in the deed?

(iii)   State with reason whether Securities Premium Reserve can be used by a company to write off the discount allowed to its debtors.

(iv)   List *any four* items that are shown under the sub-head 'Other Current Assets' in the Balance Sheet of a company prepared as per Schedule III of the Companies Act, 2013.

(v)   What is the maximum limit of debentures which companies, other than Banking Companies and All India Financial Institutions, can redeem out of capital?

(vi)   (a)   Mention *any two* circumstances which can lead to dissolution of partnership.

        (b)   What is the status of the firm upon the dissolution of partnership?

This Paper consists of 11 printed pages and 1 blank page.

Question 2

(A) From the following information, calculate goodwill of the firm of Anmol [4] and Sujay at the time of admission of Dhruv:

(i) At three years' purchase of Super Profit.

(ii) On the basis of Capitalisation of Super Profit.

(a) Actual Average Profits of the firm for the last three years is ₹ 25,000.

(b) Normal Rate of Return is 10%.

(c) **Balance Sheet of Anmol and Sujay**
As at 31st March, 2019

Liabilities		Amount (₹)	Assets	Amount (₹)
Sundry Creditors		40,000	Plant and Machinery	40,000
Bills Payable		10,000	Land and Building	80,000
General Reserve		20,000	Investments (Non-trade)	50,000
Capital Accounts:			Sundry Debtors	15,000
Anmol	80,000		Bank	55,000
Sujay	90,000	1,70,000		
		2,40,000		2,40,000

(B) Manoj, Hari and Karan are partners in a firm sharing profits and losses in the [8] ratio 4:2:1. Their Balance Sheet as at 31st March, 2019, was as follows:

Balance Sheet of Manoj, Hari and Karan
As at 31st March, 2019

Liabilities		Amount (₹)	Assets	Amount ₹)
Sundry Creditors		32,600	Plant and Machinery	20,000
Bills Payable		4,000	Goodwill	7,000
General Reserve		8,400	Stock	38,000
Capital Accounts:			Bank	20,000
Manoj	16,000			
Hari	14,000			
Karan	10,000	40,000		
		85,000		85,000

Hari retired from the business on 1st April, 2019. The remaining partners decided to carry on the business. The terms of retirement provided the following:

(a) Out of the total insurance premium paid, ₹ 7,000 to be treated as prepaid insurance. The amount was earlier debited to Profit & Loss Account.

(b) General Reserve not to be distributed.

(c) Hari to be paid ₹ 24,400 in full settlement.

You are required to prepare Partners' Capital Accounts.

Question 3 [12]

Sudesh Ltd. was registered with an authorised capital of ₹ 40,00,000 divided into 4,00,000 Equity Shares of ₹ 10 each.

The company offered 50,000 shares to the public at a premium of ₹ 2 per share, payable as follows:

₹ 3 on application

₹ 6 on allotment (including premium)

₹ 3 on first and final call (due two months after allotment)

Applications were received for 60,000 shares and pro-rata allotment was made as follows:

Category A: The applicants of 40,000 shares were allotted 30,000 shares.

Category B: The applicants of 20,000 shares were allotted in full.

Excess money paid on application was utilized towards allotment.

Nobby, a shareholder from Category A, who had applied for 1,200 shares failed to pay the allotment and call money.

Vineet, a shareholder from Category B, who had been allotted 1,000 shares, paid the call money due, along with allotment.

The company forfeited Nobby's shares after the first and final call and paid interest on Calls-in-advance to Vineet @ 12% per annum on the day of the final call.

You are required to:

(i) Pass journal entries to record the above transactions in the books of the company (including entries for interest on Calls-in-advance).

(ii) Prepare Calls-in-arrears Account.

Question 4

(A) Mike and Ajay are partners sharing profits and losses in proportion to their capitals, which on 31st March, 2019, stood at ₹ 6,00,000 and ₹ 4,00,000 respectively. On this date, the firm had ₹ 1,00,000 in its Workmen Compensation Reserve and its outside liabilities amounted to ₹ 6,00,000, which included Creditors of ₹ 2,00,000 and Bills Payable of ₹ 60,000. **[8]**

The firm was dissolved on 31st March, 2019, on which date, the assets, apart from Cash of ₹ 70,000, realised ₹ 14,00,000 and the liabilities were discharged as follows:

(a) Creditors due on 31st May, 2019, were paid off at a discount of 3% per annum.

(b) Bills Payable were discharged at a rebate of ₹ 1,000.

(c) Workmen Compensation Claim of ₹ 40,000 was met.

(d) Expenses of dissolution amounting to ₹ 30,000 were paid.

You are required to prepare:

(i)   Realisation Account.

(ii) Partners' Capital Accounts.

(B) Xen, Sam and Tim are partners in a firm. For the year ended 31st March, 2019, the profits of the firm ₹ 1,20,000, were distributed *equally* amongst them, without providing for the following provisions of the partnership deed: **[4]**

(a) Sam's guarantee to the firm that the firm would earn a profit of at least ₹ 1,35,000. Any shortfall in these profits would be personally met by him.

(b) Profits to be shared in the ratio of 2:2:1.

You are required to pass the necessary *journal entries* to rectify the error in accounting.

Question 5

(A) Zee Ltd. purchased a running business from Rainbow Ltd. for a sum of ₹ 6,60,000. Zee Ltd. paid 5% of the purchase consideration by drawing a Promissory Note in favour of Rainbow Ltd. and the balance by the issue of fully paid 7% Debentures of ₹ 100 each at a premium of 10%. The assets and liabilities of Rainbow Ltd. consisted of: **[4]**

	(₹)
Fixed Assets	6,50,000
Sundry Creditors	80,000

You are required to pass the necessary journal entries in the books of Zee Ltd.

4

(B) On 1st April, 2016, the following balances appeared in the books of Shikhar Ltd. [8]

10% Debentures	₹ 14,00,000
Premium on Redemption of Debentures	₹ 1,40,000
Debenture Redemption Reserve	₹ 75,000

The debentures were to be redeemed at a premium of 10% in *two equal annual instalments* beginning from 31st March, 2018. To meet the requirements of the Companies Act, 2013, the company transferred the balance amount to Debenture Redemption Reserve on 31st March, 2017. On 30th April, 2017, it met the requirements of the Companies Act, 2013 regarding Debenture Redemption Investment and redeemed the debentures on the scheduled dates.

You are required to pass necessary journal entries to record the above transactions in the books of Shikhar Ltd. (Ignore interest on Debentures).

Question 6 [12]

Anita and Tony, each doing business as sole proprietors, started a partnership on 1stApril, 2018. Anita brought in Plant and Machinery valued at ₹ 5,00,000 whereas Tony brought in furniture costing ₹ 50,000 and ₹ 7,00,000 in cash.

Since the business needed more funds, Tony gave a loan of ₹ 2,00,000 to the firm on 30th June, 2018.

Their partnership deed provided for:

(a) Interest on capital to be allowed @10% per annum.

(b) Interest on drawings to be charged @ 6% per annum.

(c) Anita to be given a commission of 4% on the *corrected* net profits before charging commission.

(d) Tony to be given a salary of ₹ 12,000 per annum.

Tony withdrew ₹ 5,000 at the end of every month and Anita withdrew ₹ 30,000 on 1st August,2018.

The net profit of the firm, for the year 2018-19, *after* debiting Tony's salary of ₹ 12,000 per annum but *before* considering any interest due to and due from the partners, was ₹ 4,00,000.

You are required to prepare for the year 2018-19:

(i) **Profit and Loss Appropriation Account.**

(ii) **Partners' Capital Accounts.**

5

Turn over

Question 7

Smita and Punita are partners in a firm sharing profits and losses in the ratio of 3:2. Their Balance Sheet as at 31st March, 2019, is as follows:

Balance Sheet of Smita and Punita
As at 31st March, 2019

Liabilities	Amount (₹)	Assets	Amount (₹)
Sundry Creditors	14,000	Cash in hand	30,000
Bank Loan	6,000	Sundry Debtors. 22,000	
General Reserve	10,000	Less Provision for doubtful debts (2000)	20,000
Capital Accounts:		Furniture	10,000
Smita 30,000		Stock	40,000
Punita 40,000	70,000		
	1,00,000		1,00,000

On 1st April, 2019, Mita is admitted as a new partner on the following terms:

(a) The new profit sharing ratio of Smita, Punita and Mita to be 5:3:2.

(b) Provision for doubtful debts to be raised to 10% of the debtors.

(c) Punita to take over the firm's investments (not recorded in the books) at ₹ 3,000.

(d) Goodwill of the firm to be valued at ₹ 50,000. Mita to bring in cash for her share of goodwill.

(e) 50% of the goodwill to be withdrawn by the old partners.

(f) Mita to pay off the Bank Loan on behalf of the firm. The amount due to her by the firm, to be considered as part of her capital contribution.

(g) Mita to bring in the balance of her capital in cash, so as to make her capital equal to 1/5th of the total capital of the firm.

You are required to:

(i) **Pass journal entries at the time of Mita's admission.**

(ii) **Prepare the Balance Sheet of the reconstituted firm.**

Question 8

(A) Xylo Ltd. was formed on 1st April, 2017, with an authorized capital of ₹ 12,00,000 divided into Equity Shares of ₹ 10 each. It issued a prospectus inviting applications for 30,000 shares to be issued at par. The issue was fully subscribed and the amount due on the shares was received by the company. [8]

On 1st April, 2018, the company issued another 60,000 shares at a premium of ₹ 2 per share to be received with allotment. Applications for 55,000 shares were received which were duly allotted.

All the amounts due on these shares were received except the final call of ₹ 2 per share on 1,000 shares.

On 1st October, 2018, the company also issued 2,000 6% debentures of ₹ 100 each at par, to be redeemed at par in *five equal annual instalments* beginning from 1st October, 2019. The entire issue price of these debentures was received by the company with application.

Half yearly interest on the debentures of ₹ 6,000 was paid by the company to the debenture holders on 31st March, 2019.

You are required to show the relevant items under:

(i)   **Equity and Liabilities in the Balance Sheet of the Company as at 31st March, 2019 (prepared as per Schedule III of the Companies Act, 2013).**

(ii)   **Notes to Accounts.**

(B)   Under which **heads** and **sub-heads** will the following items appear in the   [4]
Balance Sheet of a company as per Schedule III of the Companies Act, 2013:

(i)   Trade Debtors

(ii)   Marketable Securities

(iii)   Finished Goods

(iv)   Patents

SECTION B (20 Marks)
Answer any two questions

Question 9

(A)   Assuming that the current ratio of a company is 0·7 : 1, mention whether this   [2]
ratio would *increase, decrease* or *not change* after the following transactions:

(i)   Payment of ₹ 15,000 made to a creditor.

(ii)   Purchase of inventory worth ₹ 1,00,000 on credit.

(B)   **Prepare a Comparative Statement of Profit and Loss of Cosmos Ltd. from   [6]
the following information:**

Particulars	31.03.2019	31.03.2018
Revenue from Operations	₹ 20,00,000	₹ 10,00,000
Purchases of stock-in-trade	₹ 12,00,000	₹ 6,00,000
Charge in Inventories of Stock-in-trade	25% of purchases of stock-in trade	20% of purchases of stock-in trade
Other Expenses	₹ 1,00,000	₹ 80,000
Tax Rate	40%	40%

7

(C) From the following extract of the Balance Sheet of Regal Ltd., taking into consideration the additional information, **you are required to calculate the amounts of the following items to be shown in the company's Cash Flow Statement for the year 2018-19:** **[2]**

(i) Fixed asset purchased.

(ii) Fixed asset sold.

(iii) Profit/Loss on sale of fixed asset.

(iv) Depreciation charged on fixed assets.

Particulars	31.03.2019 (₹)	31.03.2018 (₹)
Fixed Asset	6,00,000	4,90,000

Additional information:

(i) The provision for depreciation on fixed assets stood at ₹ 1,40,000 on 31st March, 2018 and ₹ 1,80,000 on 31st March, 2019.

(ii) During the year 2018-19, a fixed asset costing ₹ 60,000 (book value ₹ 30,000) was sold for ₹ 20,000.

Question 10 [10]

You are required to prepare a Cash-Flow Statement (as per AS-3) for the year 2018-19 from the following Balance Sheets.

Balance Sheets of Hillock Ltd.

As at 31st March, 2018 and 31st March 2019

Particulars	Note No.	31.3.2019 (₹)	31.3.2018 (₹)
I. EQUITY AND LIABILITIES			
1. Shareholders' Funds:			
(a) Equity Share Capital		2,50,000	2,00,000
(b) Reserves and Surplus	1	90,000	50,000
2. Current Liabilities:			
(a) Short-term Borrowings (Bank overdraft)		--	10,000
(b) Trade Payables		20,000	15,000
(c) Other Current Liabilities	2	5,000	5,000
(d) Short-term Provisions (Provision for Tax)		25,000	20,000
Total		3,90,000	3,00,000

8

II. ASSETS		
1. Non-Current Assets:		
Fixed Assets		
Tangible	2,55,000	2,35,000
2. Current Assets:		
(a) Current Investments	30,000	--
(b) Inventories	15,000	25,000
(c) Trade Receivables	40,000	10,000
(d) Cash and Bank Balances	50,000	30,000
Total	3,90,000	3,00,000

Notes to Accounts:

Particulars	31.3.2019 (₹)	31.3.2018 (₹)
1. Reserves and Surplus		
Balance in Statement of Profit and Loss	70,000	40,000
Securities Premium Reserve	20,000	10,000
	90,000	50,000
2. Other Current Liabilities		
Outstanding Expenses	1,000	5,000
Unclaimed Dividend	4,000	--
	5,000	5,000
3. Contingent Liability		
Proposed Dividend	5,000	10,000

Additional Information:

During the year 2018-19:

(i)   A tangible fixed asset costing ₹ 50,000 was purchased.

(ii)   Tax paid ₹ 15,000.

(iii)   Interest of ₹ 1,000 was paid on the bank overdraft.

Question 11

(A) State the objective of calculating Liquidity Ratios. [2]

(B) From the following information, calculate Earnings per share (up to two decimal places): [2]

Particulars

10% Preference Share Capital	₹ 6,00,000
Equity Share Capital (3,00,000 shares of ₹ 10 each)	₹ 30,00,000
Profit before Tax	₹ 15,00,000
Tax Rate	30%

(C) From the following information, calculate the following ratios (up to two decimal places): [6]

(i) **Debt to Total Assets Ratio**

(ii) **Proprietary Ratio**

(iii) **Inventory Turnover Ratio**

Particulars	**(₹)**
Fixed Assets	14,00,000
Current Assets (including inventory of ₹ 2,00,000)	10,00,000
Shareholders' Funds	14,40,000
Non- Current Liabilities (10% Long-term Bank Loan)	8,00,000
Current Liabilities	5,00,000
Revenue from Operations	15,00,000
Gross Profit	6,00,000

SECTION C (20 Marks)

Answer any two questions.

Question 12

(a) You enter 50+16 in a cell. The worksheet does not display 66 in the cell, instead it shows 50 + 16. What is the reason for this? [2]

(b) Explain the meaning of the following functions: [2]

    (i) Count(C15:30)

    (ii) Max(A4:A10)

(c) What is Auto filling? [2]

(d) What does the error # VALUE mean? [2]

(e) Give the full form of SQL. [2]

10

Question 13
The spread sheet below shows the sales of Nippon Ltd. made by four salesmen in the four quarters of the financial year 2018-19:

	A	B	C	D	E	F	G	H
1				Sales in ₹				
2	Salesman No.	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Total Sales	Commission @8% of sales	Commission @5% of sales
3	S1	7000	?	8500	9500			
4	S2	6000	7000	8400	9200			
5	S3	7200	8000	9300	9000			
6	S4	9100	9000	9600	8700			
7	Total							

Answer the following questions based on the above spreadsheet:

(a) It is the policy of the company to sell its goods at a profit of 25% on cost.

Write the formula to calculate:

   (i)   The profit made on the goods sold by Salesman No. S2 in Qtr 3.   **[2]**

   (ii) The cost of goods sold by Salesman No. S3 in Qtr 4.   **[2]**

   (iii) The total cost of the goods sold by the company in cell F7.   **[2]**

(b) Calculate the price at which Salesman No. S1 would have made sales in Qtr 2 if the profit made on the sales was ₹ 1,500.   **[2]**

(c) Write an expression to show the effect on the profits, if the rate of commission was reduced from 8% to 5% of the sales.   **[2]**

Question 14

(a) What is meant by the terms *Back-end* and *Front-end* as used in data applications?   **[4]**

(b) Define: **[2]**

   (i)   Table
   (ii) Field

(c) Name *any two* business applications of DBMS   **[2]**

(d) Give *any two* features of a primary key.   **[2]**

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COMMERCE

(Maximum Marks: 80)

(Time allowed: Three hours)

(Candidates are allowed additional 15 minutes for **only** reading the paper.
They must NOT start writing during this time.)

----

*Answer **Question 1** from **Part I** and **any five** questions from **Part II**.*

The intended marks for questions or parts of questions are given in brackets [ ].

PART I (20 Marks)

*Answer **all** questions.*

Question 1 [10 × 2]

Answer briefly each of the questions **(i)** to **(x)**.

(i)   What is meant by *Micro-Environment*?

(ii)   State *any two* features of a Credit Card.

(iii)   What is *Net Working Capital*?

(iv)   Give *two* advantages of Trade Credit, as a source of short-term finance.

(v)   Define *Management* as an activity.

(vi)   Moon Ltd. imported new machinery from Germany. However, the productivity of the business did not improve with the use of this machinery. On investigation, it was found that the workers were not able to operate the high-tech machinery effectively, causing poor performance and wastages.
What can be done by Moon Ltd. to overcome the above problem?

(vii)   What is meant by *Span of Control?*

(viii) Name *two* types of Markets on the basis of subject of exchange.

(ix)   State *any two* points of difference between *Marketing* and *Selling*.

(x)   What is meant by *Physical Distribution*?

This Paper consists of 3 printed pages and 1 blank page.

PART II (60 Marks)

Answer any **five** *questions.*

Question 2

(a) Explain *any three* advantages of Debentures from the Debenture holder's point of view. [3]

(b) With reference to the various dimensions of Business Environment, state what is meant by *Political Environment*. Mention *any three* components of Political Environment. [4]

(c) Enumerate *any five* points of importance of *staffing* as a function of management. [5]

Question 3

(a) Distinguish between a *Formal Organisation* and an *Informal Organisation*. [3]

(b) Explain *any four* objectives of Communication. [4]

(c) Define *Advertising*. Explain *any four* features of Advertising. [5]

Question 4

(a) Explain *any three* sources of External Recruitment. [3]

(b) Give *four* differences between Taylor's and Fayol's Principles of Management. [4]

(c) What is meant by RTGS? Give *any three* features of RTGS. [5]

Question 5

(a) Explain *any three* factors that you will consider while determining the Working Capital requirement for a business enterprise. [3]

(b) Explain *four* advantages of raising funds from Commercial Banks. [4]

(c) Explain the *first five steps* involved in the process of *Planning*, as a function of Management. [5]

Question 6

(a) Explain *any three* methods of Consumer Protection. [3]

(b) What are *Retained Earnings*? Explain *any three* demerits of Retained Earnings. [4]

(c) Define *Marketing*. Briefly explain *any three* features of Marketing. [5]

Question 7

(a) Explain *any three* objectives of Publicity, as an element of Promotion Mix. [3]

(b) What are the various Channels of Distribution available to a Manufacturer in the process of distribution? [4]

(c) Give *five* differences between *Preference Shares* and *Equity Shares*. [5]

Question 8

(a) Explain *any three* features of Industrial Products. [3]

(b) Define *Management*. Briefly explain *any three* objectives of Management. [4]

(c) Explain *any five* qualities that a good leader should possess. [5]

Question 9

Write short notes on the following:

(a) Instalment Credit as a source of short-term funds for business. [4]

(b) Line and Staff Organisation. [4]

(c) Marketing Research. [4]

ECONOMICS

(Maximum Marks: 80)

(Time allowed: Three hours)

*(Candidates are allowed additional 15 minutes for **only** reading the paper.*

They must NOT start writing during this time.)

----

*Answer **Question 1** (compulsory) from **Part I** and five questions from **Part II**.*

The intended marks for questions or parts of questions are given in brackets [ ].

PART I (20 Marks)

*Answer **all** questions.*

Question 1

Answer briefly *each* of the following questions **(i)** to **(x)**: [10×2]

(i)   What is *production function*?

(ii)   Explain the meaning of *income effect*.

(iii)   What is *progressive tax*?

(iv)   State the law of Diminishing Marginal Utility. Mention *any two* assumptions of the law.

(v)   Differentiate between *autonomous capital flow* and *accommodating capital flow*.

(vi)   What is meant by MPS? How is MPS related to investment multiplier?

(vii)   Briefly explain *any one* primary function of money.

(viii) Show with the help of a diagram, a situation when change in supply will keep the equilibrium quantity of the commodity unchanged.

(ix)   What is meant by *selling cost*? Name *one* market where selling cost is applicable.

(x)   What is meant by *operating surplus*?

This paper consists of 4 printed pages.

Turn over

PART II (60 Marks)
Answer any five questions.

Question 2

(a)   Explain the geometric method of calculating elasticity of supply.   **[3]**

(b)   Explain the concept of *Diminishing Marginal Rate of substitution* and show how it affects the indifference curve.   **[3]**

(c)   The marginal utility schedule of a rational consumer is given below. If the price of a commodity is ₹ 35, explain with the help of a diagram, how the consumer attains equilibrium.   **[6]**

Number of the commodity bought	1	2	3	4	5
MU	50	45	40	35	30

Question 3

(a)   Explain *any two* reasons for the supply curve to be positively sloped.   **[3]**

(b)   Briefly explain how equilibrium price is determined with the help of demand and supply curves.   **[3]**

(c)   Discuss the *three* stages of the Law of Variable Proportions with the help of diagrams. In which stage will a rational producer like to operate?   **[6]**

Question 4

(a)   When price of commodity X changes from ₹ 40 per unit to ₹ 20 per unit, its demand increases by 20 units. If price elasticity of demand is 0·5, calculate the initial and the final quantity demand of commodity X.   **[3]**

(b)   Explain with the help of a diagram, the relationship between MR and TR under imperfect competition.   **[3]**

(c)   Using diagrams, explain the concepts of: **[6]**

      (i)   Shut-down point

      (ii)   Break-even point of a firm in perfect competition under short run.

Question 5

(a)   Give reasons for the following: **[3]**

      (i)   TC and TVC curves do not start from the same point.

      (ii)   ATC and AVC curves do not touch each other.

(b)   Explain *any two* factors affecting the demand of a commodity, other than its price.   **[3]**

(c) Differentiate between *perfectly competitive market* and *monopolistically competitive market* on the basis of the following: [6]

    (i)   Nature of the product

    (ii)   Price influence

    (iii)   Relationship of AR and MR

    (iv)   Demand curve

Question 6

(a) Discuss *two* methods of Redemption of *public debt* in an economy. [3]

(b) How is *fiscal deficit* different from *primary deficit*? Explain *one* implication of fiscal deficit. [3]

(c) Discuss *any four* causes of adverse Balance of Payments of a country. [6]

Question 7

(a) Mention the components of M_1, M_2 and M_3 measures of money supply by RBI. [3]

(b) Explain the following functions of the Central Bank: [3]

    (i)   Custodian of foreign exchange reserves.

    (ii)   Lender of the last resort.

(c) Discuss the different ways in which commercial banks extend loans to their customers. [6]

Question 8

(a) Briefly explain the mechanism of the investment multiplier with the help of a schedule. Take initial increase in autonomous investment as ₹ 1000 crores and MPC as $0 \cdot 8$. [3]

(b) Briefly discuss components of Aggregate Demand in an economy. [3]

(c) Explain the concept of *deflationary gap* with the help of a diagram. Discuss *any two* monetary measures to reduce the gap. [6]

Question 9

(a) How can you obtain: [3]

    (i)   National income from GDP_{MP}.

    (ii)   Personal disposable income from personal income.

(b)   With the help of relevant examples, explain the meaning of *leakages* and *injections*   [3]
in the circular flow of income.

(c)   From the following data, calculate GNP$_{FC}$, NDP$_{FC}$ and national income: [6]

	Item	₹ in crores
(i)	Private final consumption expenditure	950
(ii)	Gross domestic fixed capital formation	370
(iii)	Consumption of fixed capital	20
(iv)	Government final consumption expenditure	410
(v)	Closing stock	300
(vi)	Subsidy	80
(vii)	Net exports	(-)50
(viii)	Wages and salaries	780
(ix)	Net factor income from abroad	(-)40
(x)	Indirect tax	180
(xi)	Opening stock	150
(xii)	Profit before tax	200