

Modi Public School, Siliguri

Preparatory Examination – 2020-21

CLASS 12

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General Instructions:

1. This paper is divided into two parts: A & B.

2. Part A – 40 Marks

Part B - 40 Marks

3. Separate instructions are given with each part and question, wherever necessary. Read these instructions very carefully and follow them faithfully.

3. Do not exceed the prescribed word limit while answering the questions.

Part A (40 Marks)

READING (20 Marks)

Q1. Read the passage given below.

Cycle of Change: Biking communities making the bicycle popular again

1. In 1976, six-year old Anil Uchil started cycling by renting a bicycle at 25 paise an hour. He got his own road bike when he turned 13, and he cycled everywhere: to school, college and even to work in 1933. He still cycles to work. "It's healthy, environment-friendly and economical. But the real reason I cycle is because it's sheer fun," he says. Earlier this year, PM Narendra Modi, in a speech on environmental crisis, said, "Why don't we make Sunday cycle day? I am saying that only one day a week; don't use fuel-driven vehicles." Internationally, a lot has been done to encourage people to use the bicycle as a primary means of transport. UK's Cycle to Work scheme offers tax-free bicycles to employees. 45% of people in Copenhagen cycle to work/college. In Brussels (Belgium), Geneva (Switzerland), or San Francisco (USA), it is not uncommon to see top rung corporate executives in three-piece suits cycling their way to office.

2. Cycling, though, has been a part of Indian culture for decades. Apart from people across strata in smaller towns and villages, in cities, mill workers, newspaper delivery boys, milk vendors and bread sellers have always used the bicycle. Today, the resurgent popularity of the bicycle isn't so much as a practical mode of communicating as it is a way towards fitter lifestyles and eco-friendliness. Around the late 2000s, as the middle and affluent classes took to cycling, internet penetration also grew in India. Many made use of social media to create awareness. Numerous groups on Facebook today help cyclists connect to fellow riders. The shared passion for cycling brings together absolute strangers, building friendships and a sense of community.

3. Jose George, an avid cyclist enthusiast and the owner of the cycling store, Haybren Adventurers, says, "Riding in a group is always more enjoyable and you end up riding a lot more." Usually, the ride distances range from 20 to 80 km, and are held mostly on weekends. Apart from the environmental benefits, cycling is also an effective way to break from a sedentary lifestyle. "It's a low-impact exercise where you don't carry your body weight. The machine does. It's great stress buster too," George says. But while there are eager riders, the lack of infrastructure is a deterrent. Dedicated cycling lanes are still a distant dream. And if the traffic and questionable driving skills of many don't discourage you, the potholes and gaps between concrete segments might. Another sore point is the derisive attitude of motorists and drivers. Banker and cycling enthusiast Ninad Waghule, 28, says, "Most drivers aren't considerate towards cyclists. However, if you're on an expensive cycle and wearing a helmet, you get more respect compared to a regular person commuting to work. It's a pity."

4. The cycling culture has also given birth to adventure travel companies that organise cycling trips. From short weekend trips to longer and more arduous (but

rewarding) journeys, cycling tours are gaining popularity. American science educator Bill Nye famously said, "There's something wrong with a society that drives a car to work out in a gym." Thankfully, in spite of potholed roads and our despicable habit of honking cyclists out of the way, things are changing.

On the basis of your understanding of the passage, answer ANY TEN questions from the eleven that follow.

(10x1=10)

(i) Cycling is becoming popular again due to:

- (a) traffic jams
- (b) request of the Prime Minister
- (c) health benefits
- (d) reviving Indian culture

(ii) Riding in groups is more beneficial because it helps to:

- (a) restrict friendships
- (b) inculcate sense of kinship
- (c) follow the routine of everyday life
- (d) None of these

(iii) The deterrents to cycling include:

- (a) co-operation of the motorists
- (b) stress while cycling
- (c) non-availability of allocated lanes for cyclists
- (d) going to gym regularly

(iv) What would happen if we make Sunday a cycle day?

- (a) Lots of fuel would be saved
- (b) It would become a fun day
- (c) It would help to control environmental crisis
- (d) reviving Indian culture

(v) According to the passage, how should cycling be adopted?

- (a) As a primary means of transport.
- (b) As a fast means of transport.
- (c) As a secondary means of transport
- (d) As a popular means of transport

(vi) What made cycling so popular in advanced countries?

- (a) Tax-benefits
- (b) Cycling to work places
- (c) The cycling enthusiast
- (d) All of these

(vii) Pick the option showing the CORRECT use of the word 'affluent'?

- (a) Affluent and well-educated, the rich children were able to get admission in the Cambridge University.
- (b) She acts as a deterrent to win the argument
- (c) The lack of basic facilities is s deterrent to buyers.
- (d) Use insecticides as a deterrent to avoid further damage to the crops.

(viii) But while there are eager riders, the lack of infrastructure is a deterrent.

Pick the option in which the meaning of 'deterrent' is NOT the same as it is in the passage

- (a) Hope this punishment will act as a deterrent to the criminals.
- (b) She acts as a deterrent to win the argument.
- (c) The lack of basic facilities is a deterrent to buyers.
- (d) Use insecticides as a deterrent to avoid further damage to the crops.

(ix) Pick the option that correctly states what DOES NOT happen while riding a bicycle

- (a) It improves the environment.
- (b) It is the most economical transport.

(c) It makes one enthusiastic and fresh.

(d) It makes one lethargic and dull.

(x) "...It is not uncommon to see top rung corporate executives in three-piece suits cycling their way to office." not uncommon means:

(a) fairly common

(b) not rare

(c) more frequent

(d) less common

(xi) Another sore point is the derisive attitude of motorists and drivers.

Derisive attitude suggest:

(a) The motorists mock cyclists and show contempt.

(b) They show them respect and love

(c) They appreciate cyclists and cycling

(d) They too show eagerness to cycle with cyclists

Q2. Read the passage given below.

1. Despite provision in law and sustained campaigns by the Delhi traffic police, helmet rule violation has remained the most fined offence on city roads over the last three years. In 2018, over 11.93 lakh riders were prosecuted for riding without helmets. The prosecution figure stood at over 11.02 lakh and 9.88 lakh in 2017 and 2016 respectively. Both these years helmet violation topped the list of the most flouted rules in the city, followed by improper parking and driving without seatbelts.

2. The number of two-wheeler on the roads of Delhi is increasing every day, and with it, the number of riders plying the streets without helmets is also going up, shows police data. Riding your two wheeler with your helmet hung around your

arm planning to slip it or only when you spot a traffic constable-might seem like a convenient option but will cost you your life in case of an accident, say experts.

- **Helmet rule violation is the most fined offence.**
- **Riding two-wheeler with helmet hung around arm is trendy.**
- **IIT Bombay studied fatal accidents caused due to not wearing helmets.**
- **The Motor Vehicles Act, 1988 is being neglected.**
- **Youngsters dodge check points**

3. A 2016 study by IIT Bombay found that for every 10 fatal road accidents in India, three people die due to the lack of helmets or seatbelts. Despite traffic rules making it mandatory for riders to wear helmets, every year, hundreds in the country die as they fail to understand the importance of wearing a safety gear.

4. Delhi traffic police officers say riders in Delhi are no different. Despite the Motor Vehicles Act, 1988, making Bureau of Indian Standards (BIS)-certified helmets mandatory, most riders in the national capital do not comply with the rule. While many riders carry helmets out of fear of law, they choose to wear it only when they spot a policeman ticketing violators, the traffic policeman said.

5. Traffic constables along Rajapath said bikers, especially youngsters, would rather dodge check points or change their route than wearing a safety gear and keeping themselves in case of crash. (Source: Hindustan Times)

On the basis of your understanding of the passage, answer ANY TEN questions from the eleven that follow.

(10X1=10)

(i) **According to the passage, one of the most common reasons the people give for not wearing a helmet is:**

- (a) they are of forgetful nature
- (b) it gives them headache
- (c) it causes irritation
- (d) it is easy to pay fine

(ii) Pick the option that lists the statements that are NOT TRUE according to the passage.

1. Delhi Traffic Police must show some more leniency towards helmet rule violators.
2. Most of the fatal road accidents occurred due to not wearing helmet.
3. This year the number of two-wheeler riders without helmet decreased to a great extent as compared to the previous year.
4. As per the Motor Vehicles Act, 1988, all two-wheeler riders must wear BIS certified helmets.

- (a) 1 and 2
- (b) 2 and 3
- (c) 1 and 3
- (d) 2 and 4

(iii) The word 'louted, as used in para 1, means the same as:

- (a) Obeyed
- (b) Exaggerated
- (c) Ignored
- (d) Excessive

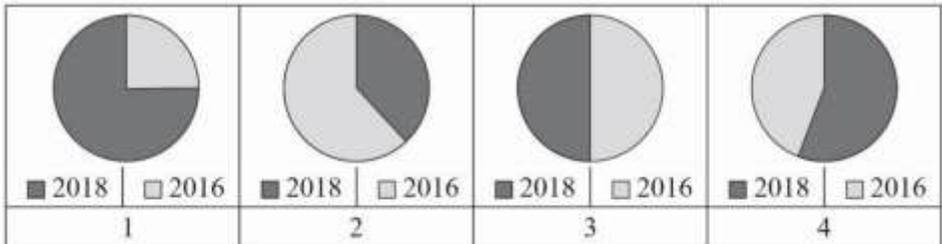
(iv) What do you think is the most fined offence in Delhi?

- (a) Seatbelt rule violation
- (b) Odd-even rule violation
- (c) Helmet rule violation
- (d) Improper parking

(v) According to the passage, what makes people wear a helmet?

- (a) The fear of law
- (b) Their safety
- (c) Heavy fine
- (d) Jail sentence

(vi) Based on the data given in the passage, choose the option that correctly states the depiction of two-wheeler riders prosecuted for riding without helmets in 2016 and 2018.



(a) Option 1

(b) Option 2

(c) Option 3

(d) Option 4

(vii) What do you think is the message of Delhi Police in this passage?

(a) Wear helmet for your own safety.

(b) Wear helmet to avoid fine.

(c) Flout rules considering fine.

(d) Do not flout rules.

(vi) According to Delhi Police, who flouts the rule most?

(a) Youngsters

(b) Women

(c) Old age people

(d) Men

(ix) Miss happenings on roads can be stopped if:

(a) one follows all safety rules

(b) one follows half safety rules

(c) one wears a seatbelt

(d) one wears a helmet

(x) What acts as a barrier for head injury in case of an accident?

(a) A seatbelt

(b) A scarf

(c) A mask

(d) A helmet

(xi) The most vulnerable organ when it comes to road accidents is:

- (a) Head
- (b) spinal cord
- (c) Both (a) and (b)
- (d) Neither (a) nor (b)

LITERATURE (20 marks)

Q3. Read the extracts given below and attempt ANY TWO of the three given by answering the questions that follow. (4+4=8)

A.

Mukesh's family is among them. None of them know that it is illegal for children like him to work in the glass furnaces with high temperatures, in dingy cells without air and light; that the law, if enforced, could get him and all those 20,000 children out of the hot furnaces where they slog their daylight hours, often losing the brightness of their eyes. Mukesh's eyes beam as he volunteers to take me home, which he proudly says is being rebuilt. We walk down stinking lanes choked with garbage, past homes that remain hovels with crumbling walls, wobbly doors, no windows, crowded with families of humans and animals coexisting in a primeval state.

(i) The narrator here refers to the families that:

- (a) were involved in rag-picking in Seemapuri
- (b) were unaware about the consequence of their profession
- (c) were involved in bangle-making profession in Firozabad
- (d) deliberately shoved their children in rag-picking

(ii) The extract proved that at that time in our country:

- (a) children were oppressed by their family
- (b) the law and order was lax

- (c) poverty was on the extreme
- (d) illiteracy was on the extreme

(iii) Which of these styles is being used by the author, when he says, "We walk down stinking lines... a primeval state"?

- (a) Descriptive
- (b) Dramatic
- (c) Humorous
- (d) Persuasive

(iv) Through this extract, the author wants to highlight the

- (a) negligence of bureaucrats
- (b) status of child labour in our country
- (c) plight of the poverty-sicken street children
- (d) plight of the villages in rural areas

B.

Presently, the landlords learned that Germany had developed _____. They, thereupon, obtained agreements from the sharecroppers to pay them compensation for being released from the _____ percent arrangement.

(i) What product was endorsed by Germany?

- (a) Synthetic indigo
- (b) Herbal tea
- (c) Coffee beans
- (d) Synthetic fibre

(ii) On what percentage of land were the peasants compelled to plant indigo?

- (a) 50 percent
- (b) 75 percent
- (c) 15 percent
- (d) 33 percent

(iii) What did the British want the peasants to do instead?

- (a) To surrender their lands
- (b) To work for free
- (c) To work at a reduced price
- (d) To compensate for being released from the arrangement

(iv) What would be the impact of synthetic indigo on the prices of natural indigo?

- (a) Price of natural indigo would fall
- (b) Price of natural indigo would rise marginally
- (c) Price of natural indigo would be doubled
- (d) Price of natural indigo would be stagnant

C.

Hana, working hard on unaccustomed labour, saw a messenger come to the door in official uniform. Her hands went weak and she could not draw her breath. The servants must have told already.

(i) Why is Hana working hard on unaccustomed labour?

- (a) She is tired of serving the patient.
- (b) She is not a hard-working woman.
- (c) All the servants had left the job.
- (d) She wants to be habitual of working alone.

(ii) Why had the 'messenger' come?

- (a) To arrest Dr. Sadao.
- (b) To check whether there is enemy or not.
- (c) To take Dr. Sadao, as General was in pain.
- (d) To help Hana at work.

(iii) Who is the author of the above-mentioned lines?

- (a) Jack Finney
- (b) Pearl S. Buck
- (c) Susan Hill
- (d) Colin Dexter

(iv) What must have the servants told?

- (a) Dr. Sadao is not a good doctor.
- (b) Dr. Sadao was doing something wrong
- (c) Dr. Sadao had decided not to operate the General
- (d) Dr. Sadao had given shelter to an American soldier

4. Read the extracts given below and attempt ANY ONE of the two given by answering the questions that follow.

(4 x 1 = 4)

A.

*Now we will count to twelve
And we will all keep still.
For once on the face of the Earth
let's not speak in any language,
let's stop for one second,
and not move our arms so much.*

(i) What could the expression "count to twelve" suggest?

- | | |
|----------------------|------------------------|
| (a) Hours of the day | (b) Months of the year |
| (c) Both a and b | (d) Neither a nor b |

(ii) The poet prevents the people from speaking in any language as language may be:

- | | |
|------------------------|-----------------------------|
| (a) the cause of noise | (b) connection among people |
| (c) uncomprehending | (d) foreign |

(iii) "...not move our arms so much." The poet says us not to:

- | | |
|-------------------------|-----------------|
| (a) accuse other people | (b) use weapons |
| (c) blame others | (d) hurt others |

(iv) The literary device used in the following lines is:

- | | |
|------------------|---------------|
| (a) Alliteration | (b) Assonance |
| (c) Synecdoche | (d) Anaphora |

OR

B.

*We have imagined for the mighty dead;
All lovely tales that we have heard or read;
An endless fountain of immortal drink,
Pouring unto us from the heaven's brink.*

i. The phrase *immortal drink* refers to

- (a) blessings of our ancestors. (b) the teachings of nature.
(c) a life-giving force. (d) the beauty of heaven.

ii. '*All lovely tales*' evoke the feeling of

- (a) sadness and nostalgia. (b) only nostalgia.
(c) inspiration and pride. (d) only pride.

iii. The rhyme scheme of the above extract is

- (a) aabb (b) abab
(c) aaab (d) abbb

iv. The literary device used by the poet in the following lines is _____.

'An endless fountain of immortal drink, Pouring unto us from the heaven's brink.'

- (a.) personification. (b) allegory.
(c) imagery. (d) synecdoche.

Q5. Attempt ANY EIGHT questions from the ten given below. (8x1=8)**(i) What is the setting of *The Last Lesson*?**

- (a) The days of the Russian War.
(b) The days of the Franco-Prussian War
(c) The days of the British War.
(d) The days of the Latin-Anglo War.

(ii) In the poem, '*My Mother At Sixty-six*', 'the familiar ache' means:

- (a) excitement (b) encouragement
(c) emotional pain (d) friendship

(iii) In Sam's letter to Charley, Galesburg was described as a:

- (a) romantic city (b) dull city
(c) big city (d) crowded city

(iv) 'She has not enjoyed a full meal in her entire lifetime'. Who is 'she' in the given sentence?

- (a) the elderly woman sitting close to Savita
- (b) Mukesh's sister-in-law
- (c) Mukesh's mother
- (d) Mukesh's grandmother

(v) In the poem, 'An Elementary School Classroom in a Slum', what does 'gusty waves' imply?

- (a) slum children
- (b) energetic children
- (c) deceased children
- (d) unhappy children

(vi) What makes Mr Lamb peculiar?

- (a) His frankness
- (b) His loneliness
- (c) His misery
- (d) His sycophancy

(vii) What helped Douglas overcome his fear of water?

- (a) Training
- (b) Regular practice
- (c) Swimming classes
- (d) Sheer determination

(viii) At 11:22 _____ minutes before the examination was to be over Jackson called Stephens telling him that the Governor wanted to speak with him.

- (a) 2
- (b) 3
- (c) 4
- (d) 5

(ix) Carter tells Governor that he had left Evans at:

- (a) Radcliff Hospital
- (b) Broad Street
- (c) St. Mary's Mag
- (d) Elsfield Way

(x) What is false about C.F. Andrews?

- (a) He was a devoted follower of Gandhi.
- (b) He was an English pacifist.
- (c) He lived in India also
- (d) Gandhi always accepted his advice.

PART-B (40 Marks)**WRITING (16 Marks)****6. Attempt ANY ONE of the following. (1x3=3)**

analysis, using appropriate format and fluency, appropriacy of style and tone

(A) You are Reeta/Roby, General Manager of Hotel Green Park, Lucknow. You need a receptionist for your hotel. Draft an advertisement in not more than 50 words to be published in 'Hindustan Times' Lucknow, calling for applicants.

OR

(B) The Environment Club of your school is organising a tree plantation drive on the World Environment Day around your school and in the neighbourhood. Write a notice in not more than 50 words inviting students to volunteer for the event. Give all the relevant details. You are Secretary of the Club.

7. Attempt ANY ONE of the following. (1x3=3)

analysis, using appropriate format and fluency, appropriacy of style and tone

(A) You are Dr. Amit Gupta, an eminent educationist. You have been invited to preside over an Inter Zonal Declamation competition by Nalini, the President of English Literary Club of Government Model Sr. Sec. School, Sector-20, Chandigarh. Write a reply accepting the invitation.

OR

(B) Your father, Mr. Raj Kumar Gupta, residing at K-18, 13th Cross Malleswaram, Bangalore wants to celebrate the success of your brother Rohith's clearing the IIT-JEE Entrance Examination and securing admission in IIT Powai, Mumbai. He wants you to draft a formal invitation for him on his behalf. Draft the invitation for him in not more than 50 words.

8. Attempt ANY ONE of the following.**(1x 5=5)**

analysis, using appropriate format and fluency, appropriacy of style and tone

(A) You are Krishan/Kiara studying at Hindustan School, Chennai. The road leading to your school is full of potholes causing a lot of congestion. Students and parents are often caught in



traffic jams. In spite of several representations the Chennai Corporation has not done anything to improve the condition. Write a letter to the editor of 'The Hindu', Chennai, drawing the attention of the Corporation authorities to the problem. Also offer your suggestions for improvement.

OR

(B) You are Anil/Annie. You wish to apply for the post of Vice-Principal in Podar International School, Latur. Write a letter to the The Manager (HR), applying for the job. Your letter should be accompanied with a Bio-Data.

 <p>PODAR Podar International School</p>	<p>Podar International School (CBSE)</p>
REQUIRES	
Podar International School, an institution educating 40,000 students through 30 schools across India.	
VICE PRINCIPAL	
Location: Latur & Satara	
<ul style="list-style-type: none"> • A Post Graduate with B.Ed having 10 years experience as a Teacher in CBSE school, • 5 years experience in administrative / supervisory capacity. • Knowledge of Marathi & computer is essential. • Accommodation is provided to outstation candidate. 	
<p>Candidate should post their detailed profile along with Passport size photograph & all certificates to D.G.M(HR), Podar Center, Parel P.O. Lane, Dr. Ambedkar Road, Parel (E), Mumbai - 400 012. or email at jobs@podar.org.</p>	
www.podar.org	

9. Attempt ANY ONE of the following.**(1x5=5)**

evaluation, using appropriate format and fluency,
appropriacy of style and tone

A. You are Lokesh/Leena of Sunrise Public School, Delhi. In the increasingly stressful lives of students, it is important to learn to be calm and balanced. Write an article on the importance of a peaceful and balanced life in about 120-150 words.

- good physical and mental health
- vacation - refreshing
- role of meditation
- sleeping well; nutritious food

OR

B. The Cultural Society of Bright Public School, Nellore organised an adult literacy camp in its neighbourhood. Write a report in 120-150 words on the camp for your school newsletter. You are Kamala Reddy, Secretary.

- number of volunteers
- number of people attending the camp
- hours spent in teaching
- benefit

LITERATURE (24 Marks)

10. Attempt ANY FIVE out of the six questions given below, in 30-40 words each. (5x2=10)

- (i) Explain the metaphor of the rattrap in context of the story by Selma Lagerlöf.
- (ii) What does the line, 'Therefore are we wreathing a flowery band to bind us to earth' suggest to you?
- (iii) Why has the mother been compared to the 'late winter's moon'?
- (iv) *With ships and sun and love tempting them to steal...*

For lives that slyly turn in their cramped holes

From fog to endless night?

a. What tempts 'them'?

b. What do you understand by 'from fog to endless night'?

(v) Which factors led Douglas to decide in favour of YMCA pool?

(vi) How do 'denizens' and 'chivalric' add to our understanding of the tigers' attitudes?

11. Attempt ANY TWO out of the three questions given below in 30-40 words each. (2x2=4)

- (i) Who was Evans? Describe two of his main characteristics.
- (ii) What is your stance regarding the two endings to the Roger Skunk story?
- (iii) Why was Charley not able to buy two tickets even after getting money?

12. Attempt ANY ONE of the following questions in 120-150 words (1x5=5)

(A) Why did Gandhi consider 'freedom from fear' and 'a realisation that in their own country they can fight for justice' more important than legal and monetary justice for the poor peasants of Champaran?

OR

(B) There is a saying “Kindness pays, rudeness never.” In the story, ‘The Rattrap’ Edla’s attitude towards men and matters is different from her father’s attitude. How are the values of concern and compassion brought out in the story, ‘The Rattrap’?

13. Attempt ANY ONE out of the following questions in 120-150 words.

(1x5=5)

A. Dr Sadao was compelled by his duty as a doctor to save a dying enemy. What made Hana to sympathise with the American sailor in spite of open defiance from the servants? How do you justify the behaviour of the old General? Was it human consideration or lack of national loyalty or dereliction of duty?

OR

B. What efforts does Mr Lamb make to strike up a friendship with Derry, the small boy, who enters his garden?

General Instructions:

1. This paper is divided into two parts: A & B.

2. Part A – 40 Marks

Part B - 40 Marks

3. Separate instructions are given with each part and question, wherever necessary. Read these instructions very carefully and follow them faithfully.

3. Do not exceed the prescribed word limit while answering the questions.

Part A (40 Marks)

READING (20 marks)

Q1. Read the passage given below and answer the questions that follow.

(12x1=12)

1. “When I leave,” Sophie said, coming home from school, “I’m going to have a boutique.”

Jansie, linking arms with her along the street; looked doubtful.

“Takes money, Soaf, something like that.”

“I’ll find it,” Sophie said, staring far down the street.

“Take you a long time to save that much.”

“Well I’ll be a manager then — yes, of course — to begin with. Till I’ve got enough. But anyway, I know just how it’s all going to look.”

“They wouldn’t make you manager straight off, Soaf.”

“I’ll be like Mary Quant,” Sophie said. “I’ll be a natural. They’ll see it from the start. I’ll have the most amazing shop this city’s ever seen.”

Jansie, knowing they were both earmarked for the biscuit factory, became melancholy. She wished Sophie wouldn’t say these things.

When they reached Sophie's street Jansie said, "It's only a few months away now, Soaf, you really should be sensible. They don't pay well for shop work, you know that, your dad would never allow it."

"Or an actress. Now there's real money in that. Yes, and I could maybe have the boutique on the side. Actresses don't work full time, do they? Anyway, that or a fashion designer, you know — something a bit sophisticated".

And she turned in through the open street door leaving Jansie standing in the rain.

"If ever I come into money I'll buy a boutique."

"Huh - if you ever come into money... if you ever come into money you'll buy us a blessed decent house to live in, thank you very much."

2. Sophie's father was scooping shepherd's pie into his mouth as hard as he could go, his plump face still grimy and sweat — marked from the day.

"She thinks money grows on trees, don't she, Dad?" said little Derek, hanging on the back of his father's chair.

Their mother sighed.

Sophie watched her back stooped over the sink and wondered at the incongruity of the delicate bow which fastened her apron strings. The delicate-seeming bow and the **crooked** back. The evening had already blacked in the windows and the small room was steamy from the stove and cluttered with the heavy-breathing man in his vest at the table and the dirty washing piled up in the corner. Sophie felt a tightening in her throat. She went to look for her brother Geoff.

3. He was kneeling on the floor in the next room **tinkering** with a part of his motorcycle over some newspaper spread on the carpet. He was three years out of school, an apprentice mechanic, travelling to his work each day to the far side of

the city. He was almost grown up now, and she suspected areas of his life about which she knew nothing, about which he never spoke. He said little at all, ever, voluntarily. Words had to be prized out of him like stones out of the ground. And she was jealous of his silence. When he wasn't speaking it was as though he was away somewhere, out there in the world in those places she had never been. Whether they were only the outlying districts of the city, or places beyond in the surrounding country — who knew? — they attained a special fascination simply because they were unknown to her and remained out of her reach.

4. Perhaps there were also people, exotic, interesting people of whom he never spoke — it was possible, though he was quiet and didn't make new friends easily. She longed to know them. She wished she could be admitted more deeply into her brother's affections and that someday he might take her with him. Though their father forbade it and Geoff had never expressed an opinion, she knew he thought her too young. And she was impatient. She was conscious of a vast world out there waiting for her and she knew instinctively that she would feel as at home there as in the city which had always been her home. It expectantly awaited her arrival. She saw herself riding there behind Geoff. He wore new, shining black leathers and she a yellow dress with a kind of cape that flew out behind. There was the sound of **applause** as the world rose to greet them.

On the basis of your reading of the above excerpt, choose the correct option to answer the following questions:

(i) Where was it most likely that the two girls would find work after school?

- | | |
|------------------|---------------------------|
| a. boutique | b. biscuit factory |
| c. glass factory | d. entertainment industry |

(ii) What were the options that Sophie was dreaming of?

- a. to own a boutique
- b. to work as a manager
- c. to be an actress
- d. All the above

(iii) Why does Jansie discourage Sophie from having such dreams?

- a. because Jansie was more practical than Sophie
- b. because Jansie was jealous of Sophie's dreams
- c. because Jansie knew they were meant to work in biscuit factory
- d. because Jansie knew that they would open a boutique together

(iv) Why did Sophie long to know more about her elder brother?

- a. to win his sympathy
- b. to exploit his secrets
- c. to be admitted more deeply into her brother's thoughts
- d. to pass on the information to Jansie

(v) 'The delicate-seeming bow and the crooked back.Sophie felt a tightening in her throat.'

Which of the following is the correct explanation of the above quoted sentence?

- A. The bow represent the incongruity between the beauty expected of women and the grim reality of their actual lives.
- B. A bow is stereotypically feminine, and despite how non-threatening the bow is in this context it evokes the oppression that also sadly comes along with being a woman or girl.
- C. The tightening in Sophie's throat lines up with feeling restricted and unable to voice one's wants or needs, which appears to be the exact situation her mother is in.
- D. Description of a time period when many women were unable to have lives outside of the home, in some ways the bow might be a chain, trapping women to domestic servitude.

- a. A, B & D
- b. A & B
- c. C & D
- d. A, B, C & D

(vi) What did Sophie fantasize about Geoff?

- a. Geoff getting married to Jansie
- b. Sophie riding behind Geoff on bike
- c. Sophie becoming the queen of the town
- d. Geoff helping her to attain her dreams

(vii) Which of the following statement is NOT true?

- a. Sophie and Jansie were classmates and friends.
- b. The socio-economic background of Sophie was poor.
- c. Sophie liked her brother Geoff more than any other person.
- d. Sophie's dreams were realistic and attainable.

(viii) "She thinks money grows on trees, don't she, Dad?" said little Derek, hanging on the back of his father's chair.

Little Derek makes the following statement because

- a. he knew that his sister wanted to own a boutique.
- b. Sophie was demanding.
- c. it seems that it was a well known fact Sophie was a dreamer who travelled on the wings of imagination.
- d. None of the above.

(ix) 'Words had to be prized out of him like stones out of the ground.'

Notice the above expression. Who is the subject here and what does this sentence mean?

- a. Derek; it was a tedious task to get him talk
- b. Derek; he spoke without thinking
- c. Geoff; it was difficult to get information out of him
- d. Sophie's father; he was always practical and rude to talk to

(x) Choose the synonym of 'tinkering' (Para 3).

- a. Attempt to repair or improve something in a casual or desultory way.
- b. mishandling
- c. restoring or reconstructing
- d. building

(xi) Choose the antonym of 'applause' (Para 4).

- a. disapproval
- b. acclamation
- c. eulogize
- d. regretful

(xii) In 'The delicate-seeming bow and the CROOKED back' (Para 2); the underlined word is a/an:

- a. Verb
- b. Adjective
- c. Adverb
- d. Noun

Q2. Read the poem given below and choose the correct option to answer the questions which follow:

(4x1=4)

*And who art thou? said I to the soft-falling shower,
Which, strange to tell, gave me an answer, as here translated:
I am the Poem of Earth, said the voice of the rain,
Eternal I rise impalpable out of the land and the bottomless sea,
Upward to heaven, whence, vaguely form'd, altogether changed, and yet the same,
I descend to lave the droughts, atomies, dust-layers of the globe,
And all that in them without me were seeds only, latent, unborn;
And forever, by day and night, I give back life to my own origin,
And make pure and beautify it;
(For song, issuing from its birth-place, after fulfilment, wandering
Reck'd or unreck'd, duly with love returns.)*

(i) Who is 'I' in the third line: "I am the Poem of Earth"?

- a. The poet
- b. The earth
- c. The sea
- d. The raindrops

(ii) What does the use of the word 'eternal' indicate here?

- a. It indicates the continual process of rain
- b. It indicates the continual process of nature
- c. Both a and b
- d. None of the above

(iii) Which word in the poem means the same as: "in a way that is uncertain, indefinitely or unclear"?

- a. Eternal
- b. Impalpable
- c. Vaguely
- d. Bottomless

(iv) _____ is the opposite of 'latent'.

- a. Inactive
- b. Manifest
- c. Dormant
- d. Resolute

Q3. On the basis of your reading of the passage and other visual inputs, choose the correct option to answer the questions which follow: (4x1=4)

Depression is a significant contributor to the global burden of disease and affects people in all communities across the world. Today, depression is estimated to affect 350 million people. The World Mental Health Survey conducted in 17 countries found that on average about 1 in 20 people reported having an episode of depression in the previous year. Depressive disorders often start at a young age; they reduce people's functioning and often are recurring. For these reasons, depression is the leading cause of disability worldwide in terms of total years lost due to disability. The demand for curbing depression and other mental health conditions is on the rise globally. A recent World Health Assembly called on the World Health Organization and its member states to take action in this direction (WHO, 2012).

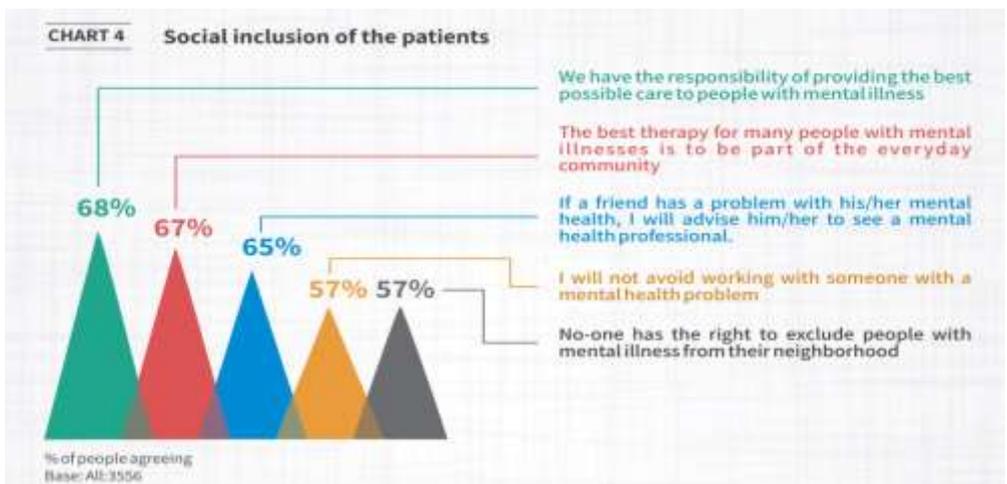
A.

INDIA AMONG COUNTRIES WORST HIT BY DEPRESSION

Country	Total cases of depression	% of population suffering from depression disorders (prevalence)	Total cases of anxiety	% of population suffering from anxiety disorders
India	5.7 crore	4.5	3.8 crore	3
China	5.5 crore	4.2	—	—
Bangladesh	63.9 lakh	4.1	69 lakh	4.4
Indonesia	91.6 lakh	3.7	81.1 lakh	3.3
Myanmar	19.1 lakh	3.7	17.2 lakh	3.3
Sri Lanka	8 lakh	4.1	6.7 lakh	3.4
Thailand	28.8 lakh	4.4	22.7 lakh	3.5
Australia	13.1 lakh	5.9	15.5 lakh	7
Japan	50.6 lakh	4.2	36.8 lakh	3.1
Malaysia	11.2 lakh	3.8	14.6 lakh	4.9
Philippines	32.9 lakh	3.3	30.7 lakh	3.1

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B.



i. Which country ranks the highest in the percentage of population suffering from depression and anxiety disorders? (Picture A)

- a. only Australia
- b. India and Malaysia
- c. Thailand and Australia
- d. Philippines and Bangladesh

ii. What percentage of people agree that the best therapy for many people with mental illness is to be part of the everyday community? (Picture B)

- a. 65%
- b. 68%
- c. 57%
- d. None of the above

iii. Which of the following statements is NOT true?

A. The World Mental Health Survey conducted in 17 countries found that on average about 1 in 20 people reported having an episode of depression in 2011.

B. Depressive disorders often start at a young age; they reduce people's functioning and often are recurring.

C. Since the effects of depression can be long-lasting or recurrent therefore it can dramatically affect a person's ability to function and live a rewarding life.

- a. A & C
- b. None of these
- c. Only C
- d. Only B

iv. Which among the following is NOT an effective treatment of depression?

- a. anti-depressant medication and psychotherapy
- b. self-help books and internet-based self-help programs
- c. mental and emotional support by friends and family
- d. drug abuse and alcoholism

O4. Transform the following sentences as per the given instructions. (8x1=8)

(i) **As soon as she reached home, she learnt that she had to leave for London.**

Begin: Hardly.....

- a. Hardly had she reached home when she learnt that she had to leave for London.
- b. Hardly had she reach home, she learnt she had to leave for London.

- c. Hardly she reached home, she learnt she had to leave for London.
- d. Hardly she had reached home that she learnt that she had to leave for London.

(ii) Ramesh said, "Rajiv, please bring your physics book to school tomorrow."

Rewrite in Indirect Speech

- a. Ramesh ordered Rajiv to bring his Physics book to school the next day.
- b. Ramesh requested Rajiv to bring his physics book to school the next day.
- c. Ramesh ordered Rajiv to bring his Physics book to school tomorrow.
- d. Ramesh requested Rajiv to bring his Physics book to school tomorrow.

(iii) Some of the cakes had been eaten by the boys before the party began.

Begin: The boys

- a. The boys eat some of the cakes before the party began.
- b. The boys ate some of the cakes before the party began.
- c. The boys had eaten some of the cakes before the party began.
- d. The boys ate some of the cakes before the party.

(iv) If you are not ready to come with me, I will not go.

Begin: Unless

- a. Unless you are not ready to come with me, I will not go.
- b. Unless you are ready to come with me, I will go.
- c. Unless you don't come with me, I won't go.
- d. Unless you come with me, I will not go.

(v) It is such a wonderful opportunity that we must not miss it.

Rewrite using 'too'

- a. It is too wonderful an opportunity to miss.
- b. It is too wonderful a opportunity to miss.
- c. It is too wonderful opportunity to be missed.
- d. It is too wonderful an opportunity to be missed.

(vi) We did not know that Mr. Francis was retiring and leaving for Ooty.

Begin: Little.....

- a. Little we knew that Mr. Francis was retiring and leaving for Ooty.
- b. Little did we know that Mr. Francis was retiring and leaving for Ooty.
- c. Little had we known that Mr. Francis was retiring and leaving for Ooty.
- d. Little was known that Mr. Francis was retiring and leaving for Ooty.

(vii) He knew the culprit, but refused to admit it.

Begin: Although.....

- a. Although he knew the culprit he did not admit.
- b. Although knowing the culprit he did not admit it.
- c. Although he knew the culprit yet he did not admit it.
- d. Although the culprit was known to him, he did not admit.

(viii) If Rita had finished her work earlier, she would have gone to the market.

Begin: Had.....

- a. Had Rita finished her work earlier, she would go to the market.
- b. Had Rita not finished her work earlier, she would have gone to the market.
- c. Had Rita finish her work earlier, she would have gone to the market.
- d. Had Rita finished her work earlier, she would have gone to the market.

Q5. Choose the correct answer from the options given in the following questions. (Any 12) (12x1=12)

(i) Which of the following statements is NOT true about the play Chandalika?

- A. Chandalika is a tragedy of self-consciousness over-reaching its limits.
- B. Self-consciousness, up to a point, is necessary to self-development.
- C. But self-consciousness, like good wine, easily intoxicates, and it is difficult to control the dose and have just enough of it.

D. Without rights there can be no obligations, and service and virtue when forced become marks of slavery.

- a. A & B
- b. C & D
- c. Only D
- d. None of these

(ii) The Gaelic phrase 'Derevaun Seraun' means?

- a. The end of pleasure is pain
- b. I sell my dreams
- c. The divine image
- d. The astral body

(iii) Who was instrumental in teaching Ingmar Bergman film making from scratch?

- a. Lorens Marmstedt
- b. Alf Sjoberg
- c. Carl Anders
- d. D. H. Lawrence

(iv) In Literature, a method of narration that describes happenings in the flow of thoughts in the minds of the characters is called

- a. psychological fantasy
- b. utopian style
- c. stream of consciousness
- d. psychoanalysis

(v) Which of the following statement is NOT true about *Freedom*?

- A. Sane Trade Union would never sanction more than one big strike at a time.
 - B. If you allow any person, or class of persons, to get the upper hand of you, he will shift all that part of his slavery to Nature that can be shifted on to your shoulders.
 - C. The master class, through its parliaments and schools and newspapers, makes the most desperate efforts to help us realise our slavery.
 - D. It is contended, you must make men ignorant idolaters before they will become obedient workers and law-abiding citizens
- a. Only B
 - b. Only C
 - c. Only D
 - d. Only A

(vi) I don't want to grow in any one direction any more. And, if I can help it, I don't want to stimulate anybody else into some particular direction. A particular direction ends in a *cul-de-sac*. We're in a *cul-de-sac* at present.

What does *cul-de-sac* mean?

- a. a street or passage closed at one end
- b. crossroads
- c. a rough path/alley
- d. winding road

(vii) Pick the correct match.

A. *To me thou , falsely thine;*

And I to thee mine actions shall disguise.

Time and Time Again

B.of Hindus, Christian, and Muslim

Cut off sometimes by a change of wind,

Kubla Khan

C. *The nineteenth autumn has come upon me*

Since I first made my count;

Trees

D. *And the Raven his nest has made*

In its thickest shade

The Human Abstract

- a. only D
- b. only C
- c. only B
- d. only A

(viii) Who is the poet of *Time and Time Again*?

- a. Kamala Das
- b. W.B. Yeats
- c. A.K. Ramanujan
- d. Emily Dickinson

(ix) *A Vision in a Dream*: _____ . Complete the title of the poem by filling in the blank.

- a. Kubla Khan
- b. An Afterthought
- c. A Story
- d. A Fragment

(x) Dr Margolin did NOT treat them for free:

- | | |
|--------------|-------------------|
| a. Relatives | b. Rabbis |
| c. Refugees | d. Jewish writers |

(xi) Eveline was about to explore another life with _____.

- | | |
|-----------|----------|
| a. Ernest | b. Frank |
| c. Freud | d. Harry |

(xii) Pablo Neruda is a/an _____ poet.

- | | |
|------------|-------------|
| a. Spanish | b. American |
| c. Chilean | d. British |

(xiii) Where did Alph, the sacred river flow?

- a. Xanadu
- b. where Mercy, Love, Peace and Pity dwell
- c. at Coole
- d. in the town Sencimin which was destroyed by the Germans

Part B (40 Marks)

Q6. Attempt any three of the following questions in 120-150 words. (3x5= 15)

(i) Is it true that acting quickly and instinctively is the best response to a crisis? Or are there times when an urgent situation requires a more careful consideration and a slower response? Write an essay on the topic, 'Think before you Leap.'

(ii) The mass media, including TV, radio and newspapers, has a great influence in shaping people's ideas. Prepare a speech to express your opinion on this topic.

(iii) On the occasion of the International Yoga Day hundreds of school students participated in an hour long yoga session with the honourable Prime Minister at Rajpath. As a correspondent for a national daily, write a report about it.

(iv) The world is dealing with an unprecedented spike in illegal wildlife trade and poaching, threatening to overturn decades of conservation gain. Recently, in one of the largest seizures of illegal ivory, 23 metric tons (representing 2500 elephants) of ivory was confiscated by authorities. On the occasion of World Environment Day on June 5, draft a speech expressing your concern for the school assembly on the topic, ‘Inculcating Zero Tolerance for Illegal Wildlife Trade.’

Q7. Attempt any one of the following questions in 120-150 words. (1x5-5)

(i) Due to the globalization of food industry and fast food culture, traditional healthy diets are increasingly being replaced by unhealthy junk food containing artificial additives and preservative chemicals. This has an adverse effect on the health of the children. Write an article using the statistics and picture given below.



At least 10% of children ages 5 to 19 in every upper-middle and high-income country are classified as overweight. Low-income countries are quickly catching up. In 1990, only 3% of those countries saw that 10% rate. By 2016, 76% did.



Source: NCD Risk Factor Collaboration via UNICEF

Credit: Connie Hanzhang Jin/NPR

(ii) You are Arpit / Arpita of Zenith Public School, Mumbai. You went to Gateway of India with your friends for an outing where you observed the local guides following and pestering the foreign tourists. You could see the irritation and disgust in the eyes of the tourists. It made you so disturbed that you decided to write an article for a local newspaper sharing your views and concern over the image of your city and country that is tarnished by such acts.

Q8. Answer any one of the following questions in 30-40 words. (1x2=2)

(i) What do 'the light tread' and 'the sore heart' refer to?

(ii) "Far Psalteries of Summer – Enamoring the Ear

They never yet did satisfy – Remotest – when most fair"

a) What do you understand by 'Psalteries of Summer'?

b) What is the significance of the use of dashes in these lines?

Q9. Answer any one of the following questions in 40-50 words. (1x3=3)

(i) *Could I survive within me*

Her symphony and song,

To such a deep delight, twould win me,

That with music loud and long,

I would build that dome in air,

That sunny dome! those caves of ice!

a. What does the poet wish about the song?

b. What can the poet achieve through music and how?

(ii) Why does the author compare Neruda to a Renaissance Pope?

Q10. Answer any one of the following questions in 120-150 words. (1x5=5)

(i) Dr. Solomon Margolin was a very important member of his community. Justify.

(ii) By weaving the theme of human injustice of distinctions, how does Rabindranath Tagore highlight the social reality of the times? (*Chandalika*)

Q10. Answer any one of the following questions in 30-40 words. (1x2=2)

(i) What was Raja's opinion of human beings when he was in the circus?

(ii) What were the Master's requests to the zoo official before handing Raja over to him?

Q12. Answer any one of the following questions in 40-50 words. (1x3=3)

(i) What is the Tiger's perception of God? How is it different from man's perception of God?

(ii) Describe the role played by Swamiji in 'A Tiger for Malgudi'.

Q13. Answer any one of the following questions in 120-150 words. (1x5=5)

(i) What is R.K. Narayan's aim in creating the character of Raja?

(ii) In what ways are the human characters in A Tiger for Malgudi, a sharp contrast to the Tiger?

General Instructions:

Read the following instructions carefully.

- There are 33 questions in this question paper. All questions are compulsory.
- Section A: Q. No. 1 to 2 are case-based questions having four MCQs or Reason Assertion type based on given passage each carrying 1 mark.
- Section A: Question 3 to 16 are MCQs and Reason Assertion type questions carrying 1 mark each
- Section B: Q. No. 17 to 25 are short answer questions and carry 2 marks each.
- Section C: Q. No. 26 to 30 are short answer questions and carry 3 marks each.
- Section D: Q. No. 31 to 33 are long answer questions carrying 5 marks each.
- There is no overall choice. However, internal choices have been provided.
- Use of calculators and log tables is not permitted.

SECTION A (OBJECTIVE TYPE)

1. Read the passage given below and answer the following questions: (1x4=4)

Observe the following table showing boiling points of alcohol, molar mass. Study the table and answer the questions based on table and related studied concept.

Alcohol	Boiling Point	Molar Mass
CH ₃ OH	64°C	32 g mol ⁻¹
C ₂ H ₅ OH	78°C	46 g mol ⁻¹
C ₃ H ₇ OH (n-propyl alcohol)	97°C	60 g mol ⁻¹
Isopropyl alcohol	82.5°C	60 g mol ⁻¹
n-butanol	118°C	74 g mol ⁻¹
Isobutyl alcohol	108°C	74 g mol ⁻¹
Butan-2-ol	100°C	74 g mol ⁻¹
Tert. butyl alcohol	83°C	74 g mol ⁻¹

(a) Why do alcohols have higher boiling points than haloalkanes, ethers, aldehydes and ketones? 1

(b) Why does tertiary butyl alcohol have lower boiling point than n-butyl alcohol? 1

(c) How does boiling point vary with increase in carbon chain? 1

(d) How is solubility of alcohol vary with increase in molar mass? 1

2. Read the passage given below and answer the following questions: (1x4=4)

The existence of a substance at a surface in different concentration than in the bulk is called adsorption. There is two components in adsorption. One is adsorbate and the other is adsorbent. Adsorption can be explained by two types of graph. One is adsorption isobar and the other is adsorption isotherm.

a) For the adsorption of a gas on a solid, the plot of $\log(x/m)$ versus $\log p$ is linear with slope equal to

i) n ii) $1/n$ iii) k iv) $\log k$ 1

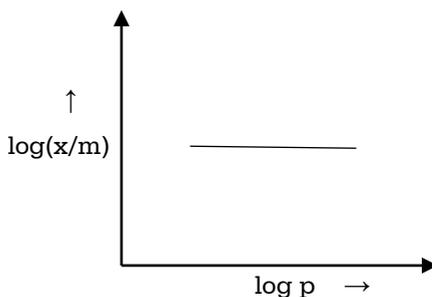
b) Which is not correct regarding the adsorption of a gas on surface of a solid? 1

i) On increasing temperature adsorption increases continuously.

ii) Enthalpy and entropy change is negative

iii) Adsorption is more for some specific substance

iv) It is a reversible reaction.



c) What does this graph show? 1

d) Write the expression of Freundlich adsorption isotherm of moderate pressure. 1

Following questions (No. 3-11) are multiple choice questions carrying 1 mark

each:

9x1=9

3. The time required for 50% completion of zero order reaction is

- a) $[R_0] / k$ b) $[R_0] / 2k$ c) $[R_0] / k$ d) None of these.

1

4. Colligative properties depend on

- a) the nature of the solute
b) the number of solute particles in solution
c) the physical properties of solute
d) the nature of the solvent

1

OR

If liquid A and B form ideal solutions

- (a) The enthalpy of mixing is zero
(b) the entropy of mixing is zero
(c) the free energy of mixing is zero
(d) the free energy as well as entropy of mixing are each zero

5. The total number of tetrahedral voids in the face centred unit cell is _____.

- (a) 6 (b) 8 (c) 10 (d) 12

1

6. Which of the following is not tetrahedral in shape?

- (a) NH_4^+ (b) SiCl_4 (c) SF_4 (d) SO_4^{2-}

1

7. Which of the following oxidation state is common for all lanthanoids?

- (a) +2 (b) +3 (c) +4 (d) +5

1

OR

Which of the following is a diamagnetic ion?

(Atomic numbers of Sc, V, Mn and Cu are 21, 23, 25 and 29 respectively)

- a) V^{2+} b) Sc^{3+} c) Cu^{2+} d) Mn^{3+}

8. IUPAC name of $[\text{Pt}(\text{NH}_3)_2\text{Cl}(\text{NO}_2)]$ is :

- (a) Platinum diaminechloronitrite
(b) Chloronitrito-N-ammineplatinum (II)
(c) Diamminechloridonitrito-N-platinum (II)
(d) Diamminechloronitrito-N-platinate (II) 1

OR

The formula of the coordination compound Tetraammineaquachloridocobalt (III) chloride is

- a) $[\text{Co}(\text{NH}_3)_4(\text{H}_2\text{O})\text{Cl}]\text{Cl}_2$ b) $[\text{Co}(\text{NH}_3)_4(\text{H}_2\text{O})\text{Cl}]\text{Cl}_3$
c) $[\text{Co}(\text{NH}_3)_2(\text{H}_2\text{O})\text{Cl}]\text{Cl}_2$ d) $[\text{Co}(\text{NH}_3)_4(\text{H}_2\text{O})\text{Cl}]\text{Cl}$

9. Molecules whose mirror image is non superimposable over them are known as chiral. Which of the following molecules is chiral in nature?

- (a) 2-Bromobutane (b) 1-Bromobutane
(c) 2-Bromopropane (d) 2-Bromopropan-2-ol 1

10. In Clemmensen Reduction carbonyl compound is treated with _____.

- (a) Zinc amalgam + HCl (b) Sodium amalgam + HCl
(c) Zinc amalgam + nitric acid (d) Sodium amalgam + HNO_3 1

OR

Which of the following compounds will give butanone on oxidation with alkaline KMnO_4 solution?

- (a) Butan-1-ol (b) Butan-2-ol
(c) Both of these (d) None of these

11. Propanamide on reaction with bromine in aqueous NaOH gives:

- a) Propanamine b) Etanamine
c) N-Methyl ethanamine d) Propanenitrile 1

In the following questions (Q. No. 12 - 16) a statement of assertion followed by a statement of reason is given. Choose the correct answer out of the following choices.

5x1=5

- a) Assertion and reason both are correct statements and reason is correct explanation for assertion.
- b) Assertion and reason both are correct statements but reason is not correct explanation for assertion.
- c) Assertion is correct statement but reason is wrong statement.
- d) Assertion is wrong statement but reason is correct statement.

12. Assertion: The packing efficiency is maximum for the fcc structure.

Reason: The coordination number is 12 in fcc structures. 1

13. Assertion: When NaCl is added to water a depression in freezing point is observed.

Reason: The lowering of vapour pressure of a solution causes depression in the freezing point. 1

OR

Assertion: Molarity of a solution in liquid state changes with temperature.

Reason: The volume of a solution changes with change in temperature.

14. Assertion: N₂ is less reactive than P₄.

Reason: Nitrogen has more electron gain enthalpy than phosphorus. 1

15. Assertion: Separation of Zr and Hf is difficult.

Reason: Because Zr and Hf lie in the same group of the periodic table. 1

16. Assertion: It is difficult to replace chlorine by -OH in chlorobenzene in comparison to that in chloroethane.

Reason: Chlorine-carbon (C—Cl) bond in chlorobenzene has a partial double bond character due to resonance. 1

SECTION B

The following questions, Q. No 17 – 25 are short answer type and carry 2 marks each.

9x2=18

17. 18 g of glucose, $C_6H_{12}O_6$, is dissolved in 1 kg of water in a saucepan. At what temperature will water boil at 1.013 bar? K_b for water is $0.52K \text{ kg mol}^{-1}$. (Mol mass of Glucose=180) 2

18. A first order reaction has a rate constant $1.15 \times 10^{-3} \text{ S}^{-1}$. How long will 5g of this reactant take to reduce to 3g? [given $\log 1.667 = 0.2219$] 2

19. A reaction is second order in A and first order in B.

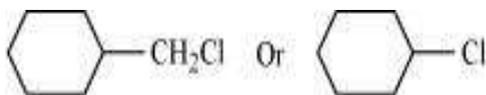
(a) Write the differential rate equation.

(b) How is the rate affected on increasing the concentration of A three times?

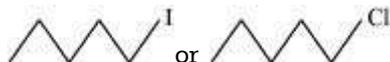
(1+1)

20. Which ones in the following pairs of substances undergoes S_N2 substitution reaction faster and why?

(a)



(b)

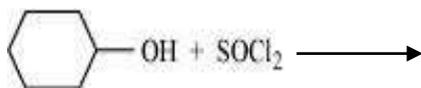


(1+1)

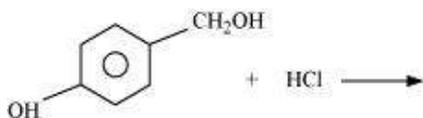
21. Write the major product:

(1+1)

(a)



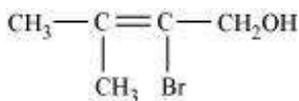
(b)

**OR**

Convert the following:

(a) 1-Bromopropane to 2-Bromopropane

(b) Toluene to Benzyl alcohol

22. (a) Give the IUPAC name of the following compound:

(b) Give chemical test to distinguish between: Phenol and Benzyl alcohol. (1+1)

OR**22.** Give a chemical equation for each of the following reactions:

(a) Williamson's synthesis

(b) Reimer-Tiemann reaction.

(1+1)

23. Account for the following observations (any two):(a) pK_b for aniline is more than that for methylamine.

(b) Methylamine solution in water reacts with ferric chloride solution to give a precipitate of ferric hydroxide.

(c) Aniline does not undergo Friedel-Crafts reaction.

(1+1)

24. How will you convert (any two):

(a) Ethanoic acid into methanamine

(b) Aniline to phenyl isocyanide

(c) Benzene to aniline

(1+1)

OR

Write chemical reaction to illustrate each of the following.

- a) Sandmeyer's reaction
- b) Hoffmann's Bromamide degradation

25. Explain what is meant by the following:

- (a) peptide linkage
- (b) invert sugar. (1+1)

SECTION C

Q.No 26-30 are Short Answer Type II carrying 3 mark each. 5x3= 15

26. a) Atoms of element B form hcp lattice and those of the element A occupy $2/3^{\text{rd}}$ of tetrahedral voids. What is the formula of the compound formed by the elements A and B?

b) Gold (atomic radius=0.144 nm) crystallizes in a face centred unit cell. What is the length of the side of the cell? (1.5+1.5)

27. a) How is XeOF_4 prepared?

b) Draw the structures of the following molecules:

- i) H_3PO_3 (ii) ClF_3 (1+2)

OR

Explain the following observations:

- (a) Noble gases are mostly inert.
- (b) The electron affinity of F is less than Cl.
- (c) Sulphur dioxide act as a oxidizing agent as well as reducing agent. (3x1)

28. Explain the following observations:

- (a) The enthalpies of atomisation of transition metals are quite high.
- (b) The members in the actinoid series exhibit larger number of oxidation states than the corresponding members in the lanthanoid series.

(c) Transition metals form compounds which are usually coloured. (3x1)

OR

Explain the following observations:

(a) Transition metals are act as a good catalyst.

(b) transition elements form alloys.

(c) Zr and Hf have almost identical radii.

29. a) Write the IUPAC name of ionization isomer of $[\text{Co}(\text{NH}_3)_5\text{Cl}]\text{SO}_4$

b) Compare the following complexes with respect to their molecular shape and magnetic behaviour:

(i) $[\text{Cr}(\text{NH}_3)_6]^{3+}$

(ii) $[\text{Fe}(\text{CN})_6]^{4-}$ (1+2)

OR

(a) Write the electronic configuration iron ion in the following complex ion and predict its magnetic behaviour : $[\text{Fe}(\text{H}_2\text{O})_6]^{2+}$

(b) Write the IUPAC name of the coordination complex: $[\text{CoCl}_2(\text{en})_2]\text{NO}_3$

(c) Predict the geometry of $[\text{NiCN}_4]^{2-}$ (3x1)

30. a) What happens when D-glucose is treated with HI?

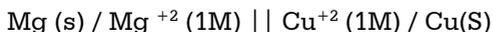
b) Give points to differentiate between fibrous proteins and globular proteins.

(1+2)

SECTION D

Q. No 31 to 33 are long answer type carrying 5 marks each. 3x5= 15

31. (a) Calculate E^0 for the cell and ΔG^0 for the cell reaction at 25⁰ C for the cell



$$[E^0\text{Mg}^{+2}/\text{Mg} = -2.37 \text{ V}, \quad E^0\text{Cu}^{+2}/\text{Cu} = 0.34\text{V}]$$

(b) A solution of Ni (NO₃)₂ is electrolyzed between platinum electrodes using a current of 5 amperes for 20 minutes. What mass of Ni is deposited at the cathode? (Atomic weights of Ni=58.7) (2.5+2.5)

OR

(a) State Kohlrausch law.

(b) Calculate the emf of the following cell at 298 K:



(Given E° (Al³⁺/Al) = -1.66 V, E° (Cu²⁺/Cu) = 0.34V, log 0.15 = -0.8239,

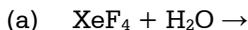
$$\log 0.025 = -1.6020) \quad (1+4)$$

32. (i) Assign a reason for each of the following statements:

(a) Ammonia is a stronger base than phosphine.

(b) Sulphur in vapour state exhibits a paramagnetic behaviour.

(ii) Complete the following chemical equations:



OR

(i) Answer the following questions:

a) Arrange the following in the increasing order of thermal stability: H₂O, H₂S, H₂Se, H₂Te

b) Give the formula of the brown ring formed at the interface during the ring test for nitrate.

(ii) A greenish yellow gas 'A' with pungent and suffocating odour, is a powerful bleaching agent. 'A' on treatment with dry slaked lime it gives bleaching powder. Identify 'A' and explain the reason for its bleaching action. Write the balanced chemical equation for the reaction of 'A' with hot and concentrated NaOH.

33. (a) How will you prepare Acetophenone from benzene?

(b) Give simple chemical tests to distinguish between the following pairs of compounds.

i) Acetophenone and Benzophenone

ii) Phenol and Benzoic acid

(c) Illustrate the following name reactions by giving example:

(i) Cannizzaro's reaction

(ii) Clemmensen reduction

(1+2+2)

OR

An organic compound (A) having formula C_8H_8O forms an orange red precipitate (B) with 2,4-DNP reagent. Compound (A) gives a yellow precipitate (C) when heated in the presence of iodine and NaOH along with a colourless compound (D). (A) does not reduce Tollen's reagent or Fehling's solution nor does it decolorize bromine water. On drastic oxidation of (A) with chromic acid, a carboxylic acid (E) of molecular formula $C_7H_6O_2$ is formed. Deduce the structures of the organic compounds (A) to (E).

(5x1)

General Instructions:

1. This question paper contains two Parts A and B. Each part is compulsory. Part A carries 24 marks and Part B carries 56 marks.
2. Both Part A and Part B have choices.

PART-A

1. It consists of two sections - I and II.
2. Section I comprises of 16 Very Short Answer Type Questions.
3. Section II contains two case studies. Each case study comprises of 5 case-based MCQs. An examinee is to attempt any 4 out of 5 MCQs.

PART-B

1. It consists of three sections - III, IV and V.
2. Section III comprises of 10 questions of 2 marks each.
3. Section IV comprises of 7 questions of 3 marks each.
4. Section V comprises of 3 questions of 5 marks each.
5. Internal choice is provided in 3 questions of Section - III, 2 questions of Section - IV and 3 questions of Section - V. You have to attempt only one of the alternatives in all such questions.

(PART - A)

Section - I

1. Find the total number of possible matrices of order 3×3 each entry 2 or 0.
2. If $|\vec{a}| = 10$, $|\vec{b}| = 2$ and $\vec{a} \cdot \vec{b} = 12$, then find the value of $|\vec{a} \times \vec{b}|$.
3. Find the order and degree of the differential equation $y = x \frac{dy}{dx} + \frac{2}{dy/dx}$.

4. If $y = x^3 + \tan x$, then find $y_2 - 6x$.

5. If $f(x) = \begin{cases} x \sin \frac{1}{x}, & x \neq 0 \\ k, & x = 0 \end{cases}$ is continuous at $x = 0$, then find the value of k .

OR

Find the value of k for which the function

$$f(x) = \begin{cases} \frac{x^2+3x-10}{x-2}, & x \neq 2 \\ k, & x = 2 \end{cases}$$

is continuous at $x = 2$.

6. Find the domain of the function defined by $f(x) = \sin^{-1} \sqrt{x-1}$.

7. Evaluate: $\int_{-2}^1 \frac{|x|}{x} dx$.

8. The result of $\tan^{-1} x - \tan^{-1} y = \tan^{-1} \left(\frac{x-y}{1+xy} \right)$ is true, when the value of xy is

OR

The set of values of $\sec^{-1} \left(\frac{1}{2} \right)$ is

9. The value of the expression $|\vec{a} \times \vec{b}|^2 + |\vec{a} \cdot \vec{b}|^2$ is

OR

If a line makes angles $\frac{\pi}{2}$, $\frac{3\pi}{4}$ and $\frac{\pi}{4}$ with X, Y and Z -axis, respectively, then direction cosines are

10. If A is a square matrix of order 3 such that $|\text{adj } A| = 64$. Then, the value of $|A|$ is equal to

11. Find the slope of the normal to the curve $y = 2x^2 + 3 \sin x$ at $x = 0$.

12. Evaluate : $\int \frac{dx}{\sin^2 x \cos^2 x}$

OR

$$\text{Find : } \int \frac{1}{x(1+\log x)} dx$$

13. Prove that $y^2 dx + (x^2 - xy - y^2) dy = 0$ is a homogeneous differential equation.

OR

Find the degree of the differential equation $\left(\frac{d^2y}{dx^2}\right)^3 + \left(\frac{dy}{dx}\right)^2 + \sin\left(\frac{dy}{dx}\right) + 1 = 0$.

14. Find the value of the integral $I = \int_0^1 x(1-x)^n dx$.

15. If $P(A|B) > P(A)$, then prove that $P(B|A) > P(B)$.

16. If a, b, c , are in A.P, then find the value of the determinant $\begin{vmatrix} x+2 & x+3 & x+2a \\ x+3 & x+4 & x+2b \\ x+4 & x+5 & x+2c \end{vmatrix}$.

Section - II

Both the case study based questions are compulsory. Attempt any 4 sub parts from each question. Each part carries 1 mark.

17. For a function $f(x)$, if $f(-x) = f(x)$, then $f(x)$ is an even function and $f(-x) = -f(x)$, then $f(x)$ is a odd function. Again, we have $\int_{-a}^a f(x) dx = \begin{cases} 2 \int_0^a f(x) dx, & \text{if } f(x) \text{ is even} \\ 0, & \text{if } f(x) \text{ is odd} \end{cases}$.

On the above information answer the following questions.

I. $f(x) = x^2 \sin x$ is a

- (a) even (b) odd (c) neither even nor odd (d) None of these

II. $\int_{-\pi}^{\pi} f(x) dx$ is equal to

- (a) $\frac{\pi}{4}$ (b) 2π (c) $\frac{\pi}{2}$ (d) 0

III. If $f(x) = x \sin x$, then $\int_{-\pi}^{\pi} x \sin x dx$ is

- (a) π (b) 2π (c) 3π (d) 4π

IV. $\int_{-\pi/2}^{\pi/2} |\sin x| dx$ is equal to

- (a) 0 (b) 1 (c) 2 (d) 3

V. $\int_{-\pi/2}^{\pi/2} \sin^7 x dx$ is equal to

- (a) 0 (b) 1 (c) 2 (d) π

18. A doctor is to visit a patient. From the past experience, it is known that the probabilities that he will come by train, bus, scooter or by other means of transport are respectively $\frac{3}{10}, \frac{1}{5}, \frac{1}{10}$ and $\frac{2}{5}$. The probability that he will be late are $\frac{1}{4}, \frac{1}{3}$ and $\frac{1}{12}$, if he comes by train, bus and scooter respectively, but if he comes by other means of transport, then he will not be late.

On the basis of above information, answer the following questions.

I. The probability, that doctor is late given that he come by bus, is

- (a) $\frac{3}{10}$ (b) $\frac{1}{5}$ (c) $\frac{1}{3}$ (d) $\frac{1}{12}$

II. The probability that doctor come by train and he is late, is

- (a) $\frac{3}{20}$ (b) $\frac{3}{40}$ (c) $\frac{3}{80}$ (d) $\frac{3}{100}$

III. The probability that he is late, is

- (a) $\frac{3}{20}$ (b) $\frac{3}{40}$ (c) $\frac{3}{80}$ (d) $\frac{3}{100}$

IV. The probability that he come by scooter given that he is late

- (a) $\frac{1}{12}$ (b) $\frac{1}{18}$ (c) $\frac{1}{21}$ (d) $\frac{1}{24}$

V. Probability that he comes late given that he comes by other means of transport, is

- (a) $\frac{1}{3}$ (b) $\frac{1}{5}$ (c) $\frac{1}{12}$ (d) 0

(PART- B)**Section - III**

19. Evaluate: $\int \frac{\log |\sin x|}{\tan x} dx$.

20. For what value of 'k' is the function $f(x) = \begin{cases} \frac{\sin 5x}{3x} + \cos x, & \text{if } x \neq 0 \\ k, & \text{if } x = 0 \end{cases}$ continuous at $x = 0$.

OR

Find the values of a and b , if the function f defined by $f(x) = \begin{cases} x^2 + 3x + a, & x \leq 1 \\ bx + 2, & x > 1 \end{cases}$ is differentiable at $x = 1$.

21. Evaluate: $\int_0^{2\pi} \cos^5 x dx$.

22. If, $x = a(\cos \theta + \theta \sin \theta)$ and $y = a(\sin \theta - \theta \cos \theta)$, then find $\frac{d^2y}{dx^2}$.

OR

Find $\frac{dy}{dx}$ at $x = 1, y = \frac{\pi}{4}$ if $\sin^2 y + \cos xy = k$.

23. If $y = (x + \sqrt{1 + x^2})^n$, then find $(1 + x^2) \frac{d^2y}{dx^2} + x \frac{dy}{dx}$.

OR

If $y = \sin^{-1}(6x\sqrt{1 - 9x^2}), -\frac{1}{3\sqrt{2}} < x < \frac{1}{3\sqrt{2}}$, then find $\frac{dy}{dx}$.

24. If $y = \sec(\tan^{-1}x)$ then find $\frac{dy}{dx}$ at $x = 1$.

25. Prove that $\tan\left(\frac{1}{2}\sin^{-1}\frac{3}{4}\right) = \frac{4-\sqrt{7}}{3}$

26. Find the vector equation of the line passing through the point A (1, 2, -1) and parallel to the line $5x - 25 = 14 - 7y = 35z$.
27. What is the range of the function $f(x) = \frac{|x-1|}{x-1}$, $x \neq 1$?
28. A line passes through the point with position vector $2\hat{i} - 3\hat{j} + 4\hat{k}$ and is perpendicular to the plane $\vec{r} \cdot (3\hat{i} + 4\hat{j} - 5\hat{k}) = 7$. Find the equation of the line in cartesian and vector forms.

Section - IV

29. If $y = x \cdot \log\left(\frac{x}{a+bx}\right)$, then prove and $x^3 \frac{d^2y}{dx^2} = \left(x \frac{dy}{dx} - y\right)^2$

OR

If $y = \frac{ax^2}{(x-a)(x-b)(x-c)} + \frac{bx}{(x-b)(x-c)} + \frac{c}{x-c} + 1$, prove that

$$\frac{y'}{y} = \frac{1}{x} \left(\frac{a}{a-x} + \frac{b}{b-x} + \frac{c}{c-x} \right).$$

30. Let $f: \mathbb{N} \rightarrow \mathbb{N}$ be defined by $f(n) = \begin{cases} \frac{n+1}{2}, & \text{when } n \text{ is odd} \\ \frac{n}{2}, & \text{if } n \text{ is even} \end{cases}$ for all $n \in \mathbb{N}$.

Find whether the function f is bijective.

31. Find the intervals in which the function f given by $f(x) = \sin x - \cos x$, $0 \leq x \leq 2\pi$ is strictly increasing or strictly decreasing.

OR

Find the equation of tangents to the curve $y = \cos(x + y)$, $-2\pi \leq x \leq 2\pi$ that are parallel to the line $x + 2y = 0$.

32. If $A = \{1, 2, 3, \dots, 9\}$ and R is the relation in $A \times A$ defined by $(a, b) R (c, d)$ if $a + d = b + c$ for $(a, b), (c, d)$ in $A \times A$. Prove that R is an equivalence relation. Also obtain the equivalence class $[(2, 5)]$
33. Evaluate $\int_0^{\pi/2} (2 \log |\sin x| - \log |\sin 2x|) dx$.
34. Two cards are drawn successively with replacement from a well-shuffled pack of 52 cards. Find the mean and variance of the number of kings.
35. Using integration, find the area of the following region. $\{(x, y) : \frac{x^2}{9} + \frac{y^2}{4} \leq 1 \leq \frac{x}{3} + \frac{y}{2}\}$

Section - V

36. Find A^{-1} , Where $A = \begin{bmatrix} 1 & 2 & -3 \\ 2 & 3 & 2 \\ 3 & -3 & -4 \end{bmatrix}$. Hence solve the system of equations,

$$x + 2y - 3z = -4$$

$$2x + 3y + 2z = 2 \text{ and}$$

$$3x - 3y - 4z = 11$$

OR

- If $A = \begin{bmatrix} 1 & -1 & 0 \\ 2 & 3 & 4 \\ 0 & 1 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} 2 & 2 & -4 \\ -4 & 2 & -4 \\ 2 & -1 & 5 \end{bmatrix}$, find AB . Use this to solve the system of equations $x - y = 3$, $2x + 3y + 4z = 17$ and $y + 2z = 7$

37. A manufacturer produces two products A and B. Both the products are processed on two different machines. The available capacity of first machine is 12h and that of second machine is 9h per day.

Each unit of product A requires 3h on both machines and each unit of product B requires 2h on first machine and 1h on second machine. Each unit of product A is sold at a profit of Rs 7 and B at a profit of Rs 4. Find the production level per day for maximum profit graphically.

OR

Solve the following linear programming problem graphically:

Minimize : $Z = 6x + 3y$

$$\text{Subject to the constraints } \begin{cases} 4x + y \geq 80 \\ x + 5y \geq 115 \\ 3x + 2y \leq 150 \\ x \geq 0, y \geq 0 \end{cases}$$

38. Find the equation of the plane through the intersection of the planes

$\vec{r} \cdot (\hat{i} + 3\hat{j}) - 6 = 0$ and $\vec{r} \cdot (3\hat{i} - \hat{j} - 4\hat{k}) = 0$, whose perpendicular distance from origin is unity.

OR

Find the shortest distance between the lines given by

$$\vec{r} = (2 + \lambda)\hat{i} - (3 + \lambda)\hat{j} + (5 + \lambda)\hat{k} \quad \text{and} \quad \vec{r} = (2\mu - 1)\hat{i} + (4\mu - 1)\hat{j} + (5 - 3\mu)\hat{k}.$$

General Instructions :

- (i) All questions are compulsory.
- (ii) The question paper has four sections: Section A, Section B, Section C and Section D.
- (iii) Section-A has 14 questions of 1 mark each and 02 case-based questions of 4 marks each. Section-B has 9 questions of 2 marks each. Section-C has 5 questions of 3 marks each and Section-D has 3 questions of 5 marks each.
- (iv) There is no overall choice. However, internal choices have been provided in some questions. A student has to attempt only one of the alternatives in such questions.
- (v) Wherever necessary, neat and properly labelled diagrams should be drawn

SECTION A (14x1 = 14)

1. Name the type of cross that would help to find the genotype of a pea plant bearing violet flowers.
2. State two microbes involved in antibiotics production.
3. What are the genetic relations involved in gene controlling ABO system of blood grouping
4. What are Cry genes ? In which organism are they present ?
5. What does SPM stand for in reference to environmental issues?
6. What is in situ conservation?
7. How BOD is related with water pollution
8. What is eutrophication?
9. What is nif gene?

10. What is the significance of test cross in genetics?
11. What are the different types of IUDs?
12. What is splicing of HnRNA?
13. **Assertion:** ABO system of blood grouping is defined on the basis of antigen present in RBC.

Reason: The alleles controlling ABO blood grouping show codominance.

- a. Both assertion and reason are true, and reason is the correct explanation of assertion.
- b. Both assertion and reason are true, but reason is not the correct explanation of assertion.
- c. Assertion is true but reason is false.
- d. Both assertion and reason are false.

14. **Assertion:** lac operon is an inducible operon

Reason : It is applicable for catabolic control

- a. Both assertion and reason are true, and reason is the correct explanation of assertion.
- b. Both assertion and reason are true, but reason is not the correct explanation of assertion.
- c. Assertion is true but reason is false.
- d. Both assertion and reason are false.

For Q no 15 and 16 there are 2 questions each based on the respective paragraph. You have to answer the questions maintaining originality of your expression.

15. Paragraph-1

A wide range of organisms belonging to bacteria, viruses, fungi, protozoans, helminths, etc., could cause diseases in man. Such disease causing organisms are called pathogens. Pathogens have to adapt to life within the environment of the

host. For example, the pathogens that enter the gut must know a way of surviving in the stomach at low pH and resisting the various digestive enzymes. Many viruses also cause diseases in human beings. Rhino viruses represent one such group of viruses which cause one of the most infectious human ailments – the common cold. They infect the nose and respiratory passage but not the lungs. Some of the human diseases are caused by protozoans too. You might have heard about malaria, a disease man has been fighting since many years. Plasmodium, a tiny protozoan is responsible for this disease.

Q.i Which type of pathogens can have best survival in host body? (2)

Q.ii What are the different groups of diseases caused by different group of pathogens? (2)

16. Paragraph-2

Detritivores (e.g., earthworm) break down detritus into smaller particles. This process is called fragmentation. By the process of leaching, water soluble inorganic nutrients go down into the soil horizon and get precipitated as unavailable salts. Bacterial and fungal enzymes degrade detritus into simpler inorganic substances. This process is called as catabolism. It is important to note that all the above steps in decomposition operate simultaneously on the detritus. Humification and mineralisation occur during decomposition in the soil. Humification leads to accumulation of a dark coloured amorphous substance called humus.

Q.i How detritus food chain is different from grazing food chain? (2)

Q.ii What is the overall purpose of this whole process of decomposition? (2)

SECTION B (9x2 = 18)

17. A pollen grain in angiosperm at the time of dehiscence from an anther is at two celled stage. Explain. How are the cells placed within the pollen grain when shed at a 2-celled stage ?

18. Define these terms in reference to the genetic code :

- (a) Unambiguous
- (b) Degenerate

19. Mention one application for each of the following in relation to immunity:

- (a) Histamine
- (b) Colostrum

20. Name the microbes that help production of the following products commercially :

- (a) Statin
- (b) Citric acid

21. List four benefits to human life by eliminating the use of CFCs.

OR

Suggest two practices giving one example of each, that help protect flora and fauna of an area.

22. (a) List the two methodologies which were involved in human genome project. Mention how they were used.

(b) Expand 'YAC' and mention what was it used for.

23. Both Haemophilia and Thalassemia are blood related disorders in humans. Write their causes and the difference between the two. Name the category of genetic disorder they both come under.

24. Secondary treatment of the sewage is also called Biological treatment. Justify this statement and explain the process.

OR

What are the characteristics that a biomolecule must have to work as Genetic material?

25. Describe the roles of heat, primers and the bacterium *Thermus aquaticus* in the process of PCR.

SECTION C (5x3 = 15)

26. Can a plant flowering in Mumbai be pollinated by pollen grains of the same species growing in New Delhi ? Provide explanations to your answer.

27. Write the characteristics of Golden rice, Flavre savre and Transgenic cow.

28. Name a human disease, its causal organism, symptoms (any three) and vector, spread by intake of water and food contaminated by human faecal matter.

OR

What are the different types of chromosomal sex determinations?

- 29.
- (a) Explain the significance of 'palindromic nucleotide sequence' in the formation of recombinant DNA.
- (b) Write the use of restriction endonuclease in the above process.
30. Explain the various steps involved in the production of artificial insulin.

SECTION D (3x5 = 15)

31. What is double fertilization-triple fusion taking place in angiosperms. What are the products of these processes?

OR

- (a) Explain the following phases in the menstrual cycle of a human female :
- (i) Menstrual phase
- (ii) Follicular phase
- (iii) Luteal phase

- 32.
- (a) Describe the structure and function of a t-RNA molecule. Why is it referred to as an adapter molecule ?
- (b) Explain the process of splicing of hn-RNA in a eukaryotic cell.

OR

Write the different components of a lac-operon in *E. coli*. Explain its expression while in an 'ON' state.

33.

A flower of tomato plant following the process of sexual reproduction produces 100 viable seeds. Answer the following questions giving reasons :

- (a) What is the minimum number of pollen grains that must have been involved in the pollination of its pistil ?
- (b) What would have been the minimum number of ovules present in the ovary ?
- (c) How many megaspore mother cells were involved ?
- (d) What is the minimum number of microspore mother cells involved in the above case ?
- (e) How many male gametes were involved in this case ?

OR

How did Hershey and Chase established that DNA is transferred from virus to bacteria ?

General Instructions:

1. This question paper contains two parts A and B. Each part is compulsory.
2. Both Part A and Part B have choices.
3. Part-A has 2 sections:
 - a. Section – I is short answer questions, to be answered in one word or one line.
 - b. Section – II has two case studies questions. Each case study has 4 case-based subparts. An examinee is to attempt any 4 out of the 5 subparts.
4. Part - B is Descriptive Paper.
5. Part- B has three sections
 - a. Section-I is short answer questions of 2 marks each in which two question have internal options.
 - b. Section-II is long answer questions of 3 marks each in which two questions have internal options.
 - c. Section-III is very long answer questions of 5 marks each in which one question has internal option.
6. All programming questions are to be answered using Python Language only.

PART - A

Section - I

Select the most appropriate option out of the options given for each question.

Attempt any 15 questions from question no 1 to 20.

1] Which of the following is valid arithmetic operator in Python:

i) ?

ii) //

iii) or

iv) ==

2] Name the python library modules which need to be imported to invoke the following functions.

i] load() ii] pow()

3] What will be the output of the following code snippet?

```
tuple_a='a','b'
```

```
tuple_b=('a','b')
```

```
print(tuple_a==tuple_b)
```

i] 0 ii] 1 iii] False iv] True

4] Name the built-in mathematical function/method that is used to return an absolute value of a number.

5] Name the protocol that is used to access mailbox and download messages to the local computers.

i] TCP/IP ii] SMPT iii] POP3 iv] FTP

6] Each IP packet must contain:

i] Only Source address ii] Only Destination address
iii] Source and Destination address iv] Source or Destination Address

7] Which module is used for working for working with CSV files in Python?

i] random ii] statistics iii] CSV iv] math

8] _____ method of pickle module is used to write an object into binary file.

9] Functions readline() and readlines() are essentially the same.

i] True ii] False

10] The _____ allows us to perform tasks related to data definition.

i] DDL ii] DML iii] TCL iv] None

11] The _____ clause allows sorting of query results by one or more columns.

i] ALL ii] DISTINCT iii] GROUP BY iv] ORDER BY

12] The rows of the table referred to as _____.

13] Your friend Ranjana complains that somebody has created a fake profile on Facebook and defaming her character with abusive comments and pictures. Identify the type of cybercrime for these situations.

14] Write the expanded form of wi-fi

15] If the following code is executed, what will be the output of the following code?

```
name="ComputerSciencewithPython"  
print(name[3:10])
```

16] Find and write the output of the following code:

```
a=10  
def call( ):  
    global a  
    a=15  
    b=20  
    print(a)  
call( )
```

17] Sanya has created a website for her sister to sell the paintings made by her. After completing the website, she wants to upload it on the internet so that anyone can access it from anywhere. Name the process through which it is possible.

18] _____ is a device that forwards data packets along networks.

19] Which command is used to modify the records of the table?

20] In _____ all computers share equivalent responsibility for processing data.

Section - II

Both the Case study based questions are compulsory. Attempt any 4 sub parts from each question. Each question carries 1 mark

21] Ranjan Kumar of class 12 is writing a program to create a CSV file “user.csv” which will contain user name and password for some entries. He has written the following code. As a programmer, help him to successfully execute the given task.

```
import _____ #line 1
def addCsv( username,password): #to write/add data into CSV file
f= open('user.csv','_____')
newfile=csv.writer(f)
newfile.writerow([usname,password])
f.close()
#csv file reading code
def readcsv( ): #to read csv file
    with open('user.csv','r') as newfile:
        newfilereader=csv._____ (newfile) #line3
        for row in newfilereader:
            print(row[0],row[1])
        newfile._____ #line4
addCsvFile("Arjun","123@456")
addCsvFile("Arunima","aru@nima")
addCsvFile("Frieda","myname@FRD")
readcsvfile( ) #line 5
```

- Name the module he should import in Line 1.
- In which mode, Ranjan should open the file to add data into the file
- Fill in the blank in Line 3 to read the data from a csv file.
- Fill in the blank in Line 4 to close the file.
- Write the output he will obtain while executing Line 5

22] A school named VVPS maintains a database 'School' that contains many tables. One of the tables is Student as shown below:

RollNo	Name	Class	Marks
1	Aarti	XII A	380
2	Neeraj	XI B	410
3	Vinay	XIIC	470
4	Shourya	XIC	390
5	Arpit	XIA	430
6	Shivani	XIIA	270

- Identify the attribute that can be declared as Primary Key.
- Write the degree and cardinality of the table Student.
- Write SQL query to add one more column Fees of decimal data type.
- The Management wishes to increase the fees from the new session by 5%.

Which command will they use from the following?

- Update Student set fees=fees*5/100;
 - Update Student change fees=fees+(fees *5/100);
 - Update Student set fees=fees+(fees *5/100);
 - Update set fees =fees+(fees*5/100) from Student;
- e] Now the Management wants to display all the tables in School database. Write the query to display the same.

Part - B**Section - I**

23] Rewrite the following code in Python after removing all syntax error(s). Underline each correction done in the code. [2]

```
x=int("enter the value of x:")
for in range[0,21];
    if x=y
        print(x + y)
    else:
        Print(x-y)
```

24] Differentiate between Circuit Switching and Packet Switching. [2]

OR

Compare 2G and 3G mobile technology.

25] Expand the following terms: [2]

- | | |
|---------|----------|
| i) HTTP | ii) CDMA |
| ii) WAN | iv) XML |

26] Write a user-defined function frequencyCount() that accepts a dictionary with a list of elements (keys) as arguments and returns the frequency of the element's occurrence in the form of dictionary. [2]

OR

Write a user-defined function with string as a parameter which replaces all vowels in the string with '\$'.

27] Evaluate the following infix expression into its equivalent postfix expression: [1+1=2]

- a) $((A - B) * (D / E) / (F * G * H))$
b) $(A+B \uparrow D) / (E - F) + G$

28] Study the following program and select the possible output(s) from options (i) to (iv) following it. Also, write the maximum and the minimum values that can be assigned to the variable. [2]

```
import random
pick= random.randint(0,3)
color= ['Red' , 'Green' , 'Blue' , 'Orange']
for i in color :
    for j in range (1, pick):
        print(i, end= " ")
    print()
```

(i) Red
Green
Blue
Orange

(iii) RedGreen
BlueBlue
OrangeOrange

(ii) Red
Green Green
BlueOrange

(iv) RedRed
GreenGreen
BlueBlue
OrangeOrange

29] What do you understand by Candidate Keys in a table? Give a suitable example of Candidate Keys from a table containing some meaningful data. [2]

30] What are the aggregate functions in SQL? [2]

31] What do you understand by Transmission Medium? Give its types with examples. [2]

32] Find the output of the python code: [2]

```
def Change (A, B=500) :
    A=A+B
    B = A - B
    Print (A, "&&", B)
    Return A
C=1000
D =2000
C= Change (C, D)
print (C, '&&', D)
D=Change (D)
```

Section - II

33] Write a Python program to find out the size of the file '(Book.txt)' in bytes, number of lines and number of words. [3]

34] ABC Infotech Pvt. Ltd. manages the records of its employees that contain empno, ename and salary. Write a program to read and fetch all the records from EMP table having salary more than 25000. [3]

OR

SS Public School is managing the student's data in 'Student' table in 'school' database. Write a Python code that connects to database school and retrieves all records and displays total number of students. [3]

35] Consider the table Employee as shown below. Write commands in SQL for the following queries: [3]

EmpCode	EmpName	EmpSalary	Job_Profile	City
E1001	Umesh Pathak	55000	Asst. Manager	Delhi
E1002	Prashant Puri	65000	Manager	Jaipur
W1003	Manoj Rana	45000	Sales Manager	Kanpur
E1004	Sukriti Pandey	87000	I.T. Head	Jaipur
E1005	Leesha Singh	43000	Sales Accountant	Delhi

a) Write a query to display the details of employees whose salary is in the range 45000 – 60000.

b) Write a query to find the Maximum Salary of employees grouped by City from Employee table.

c) Write a query to display the names of employees who are Manager in any department.

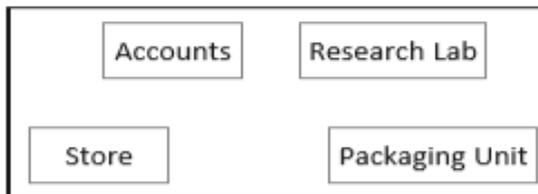
36] Write a function in Python, AddEmp(stk) and DelEmp(stk) to add a new Employee Id and Name and delete the employee, considering them to act as push and pop operations of the Stack data structure. [3]

OR

Write a function in Python, INSERT_QUEUE(List1,data) and DELETE_QUEUE(List1) for performing insertion and deletion operations in a Queue. List1 is the list used for implementing queue and data is the value to be inserted.

Section - III

37] Keep Well Medicos Centre has set up its new centre in Dubai. It has four buildings as shown in the diagram given below: [5]



Distances between various buildings are as follows:

Accounts to Research Lab	55 m
Accounts to Store	150 m
Store to Packaging Unit	160 m
Packaging Unit to Research Lab	60 m
Accounts to Packaging Unit	125 m
Store to Research Lab	180 m

Number of computers:

Accounts	25
Research Lab	100
Store	15
Packaging Unit	60

As a network expert, provide the best possible answer for the following queries:

i) Suggest the type of network established between the buildings.

- i] Display the Trainer Name, City and Salary in descending order of their Hiredate.
- ii] To display number of trainers from each city.
- iii] To display the TNAME and CITY of trainer who joined the institute in the month of December 2001.
- iv] `SELECT TID, TNAME, FROM TRAINER WHERE CITY NOT IN('DELHI', 'MUMBAI');`
- v] `SELECT TID, COUNT(*), MIN(FEES) FROM COURSE GROUP BY TID HAVING COUNT(*)>1;`

39] Consider a binary file Stock.dat that has the following data: OrderId, MedicineName, Quantity and Price of all the Medicines of Wellness Medicos. Write the following functions: [5]

- i] AddOrder() that can input all the medicine orders.
- ii] DisplayPrice() to display the price of all the medicines that have price > 500.

OR

Create a binary file funandfood.dat that can store details of rides such as Ticketno, Ridename, Noofpersons, and Price with the help of AddRides() function and write another Python function DisplayTotal() to display total amount of each ticket. Also count total number of tickets sold. [5]

C] Debit Investment Account and credit Revaluation Account

D] None of the above

4] Sports Star Charitable club has expenditure of ₹16,000 and 'deficit' debited to capital fund of ₹ 4,300 for the year 2019-20, then income for the year 2019-20 is:

[1]

A] ₹ 11,700

B] ₹4,300

C] ₹20,300

D] None of these

5] At the time of retirement capital account of retiring partner is credited by: [1]

A] The amount of his share of goodwill

B] The amount of total goodwill of the firm

C] The amount of share of goodwill of the remaining partners

D] none of these

6] At the time of dissolution of partnership firm, there is a partner's loan for ₹ 50,000 which is settled for ₹ 49,000. What journal entry will be passed?

[1]

7] A company forfeited 6,000 shares of ₹10 each on which application money of ₹3 and allotment money of ₹ 4 (including premium of ₹ 1) has been paid. Out of these 2,500 shares were reissued as fully paid up and ₹10,000 has been transferred to capital reserve. Calculate the rate at which these shares were reissued. [1]

a. ₹10 Per share

b. ₹9 Per share

c. ₹11 Per share

d. ₹8 Per share

8] A, B and C were partners sharing profits in the ratio of 3:1:1. They decided to admit D as a partner. On revaluation of assets, it was found that machinery is overvalued by 25%(book value of machinery was ₹6,25,000).

Pass the necessary journal entries for the above.

[1]

- 9] Unless otherwise specified, the partners have to share profits or losses in proportion to the capital contributed by them. True or False [1]
- 10] What will be the journal entry for rent paid to partner for the use of his property for running business? [1]
- 11] If a fixed amount is withdrawn on the last day of every quarter, then interest on drawings will be calculated for a period of _____ months. [1]
- 12] In addition to admission, retirement and death of a partner, the need for valuation of goodwill may arise in the following circumstances: [1]
- A] Change in the profit sharing ratio amongst the existing partners
B] Dissolution of a firm involving sale of business as a going concern.
C] Amalgamation of a partnership firms.
D] All of the above
- 13] A and B are a partners in a firm sharing profit and losses in the ratio of 2:1. The balance sheet showed investment at ₹6,00,000 (Market Price ₹ 6,60,000) and investment fluctuation reserve at ₹90,000. They agreed to share future profit equally. Pass the necessary journal entries. [1]
- 14] In the year ended 31st March 2018 subscriptions received by Queens club, Mumbai were ₹ 4,09,000 including ₹ 5,000 for the year ended 31st March 2017 and ₹ 10,000 for the year ended 31st March 2019. On 31st March 2018 subscription outstanding is ₹15,000 whereas on 31st March 2017 the corresponding value was ₹8,000 and advance on 31st March 2017 was ₹ 18,000.
Calculate the amount of subscriptions to be credited to income and expenditure Account for the year ended 31st March 2018. [3]

OR

Calculate the amount that will be posted to the income and expenditure account for the year 31st March 2018 [3]

Stock of stationery on 1 st April 2017	₹30,000
Creditors for stationery on 1 st April 2017	₹
20,000	
Advances paid for stationery from the year ended 31 st March 2017	₹2,000
Amount Paid for stationery during 31 st March 2018	₹1,08,000
Stock of stationery on 31 st March 2018	₹13,000
Advance for stationery on 31 st March 2018	₹3,000

15] Bhatt and Seth were carrying on business in partnership firm sharing profit and losses in the ratio of 3:2 respectively. They closed their books of accounts every year on 31st March. Their balance sheet as at 31st March 2018 was as follows: [4]

Liabilities	₹	Assets	₹
Bhatt's Capital	90,000	Furniture	20,000
Seth's Capital	60,000	Stock	1,00,000
Reserve	30,000	Debtors	50,000
Creditors	20,000	Cash	30,000
	2,00,000		2,00,000

Seth died on 1st August, 2018. Partnership deed provided that in the event of death of a partner his heirs would be entitled to be paid out:

- i] Capital to the credit of his account.
- ii] His share of reserves at the date of the last balance sheet.
- iii] His share of profit to the date of his death based on the average profits of the last three accounting years.
- iv] By way of goodwill his share of total profits for the preceding three accounting years.

The profits for the three preceding years ending 31st March each year were as follows:

2016:	₹41,800
2017:	₹39,200
2018:	₹45,000

Pass necessary journal entries in the firm's book.

OR

A, B and C were partners. Their capitals were A- ₹ 30,000; B ₹ 20,000 and C ₹ 10,000 respectively. According to the Partnership Deed, they were entitled to an interest on capital @ 5% p.a. In addition, B was also entitled to draw a salary of ₹ 500 per month. C was entitled to a commission of 5% on the profits after charging the interest on capital, but before charging the salary payable to B. The net profit for the year was ₹30,000 distributed in the ratio of capitals without providing for any of the above adjustments. The profits were to be shared in the ratio of 5 : 3 : 2. Pass necessary adjustment entry showing the workings clearly. [4]

16] Lenova Ltd. has authorised share capital of ₹1,00,00,000 divided into 1,00,000 Equity Shares of ₹100 each. It has existing issued and paid up capital of ₹25,00,000. It further issued to public 25,000 Equity Shares at a premium of 20% for subscription payable as under:

On Application: ₹ 30

On Allotment: ₹60 and

On Call: Balance Amount.

The issue was fully subscribed and allotment was made to all the applicants. The company did not make the call during the year.

Show share capital of the company in the Balance Sheet of the Company. [4]

17] A, B and C are partners sharing profits and the ratio of 2:3:5. On 31st March 2015, their Balance Sheet was as follows. [4]

Liabilities	Amt.(₹)	Assets	Amt.(₹)
Capital		Cash	18,000
A 36,000		Bills receivable	24,000
B 44,000		Furniture	28,000
C 52,000	1,32,000	Stock	44,000
Creditors	64,000	Debtors	42,000
Bill payable	32,000	Investments	32,000
Profit and Loss Account	14,000	Machinery	34,000
		Goodwill	20,000
	2,42,000		2,42,000

They admit D into partnership on the following terms :

- (i) Furniture and Machinery to be depreciated by 15%
- (ii) Stock is revaluated at ₹ 48,000.
- (iii) Goodwill to be valued at ₹24,000
- (iv) Outstanding rent amount ₹1,800.
- (v) Prepaid salaries ₹ 800.
- (vi) D to bring ₹ 32,000 towards his capital for 1/6 th share.

Prepare Revaluation Account, Partners Capital Accounts and Balance Sheet of the new firm.

18] Give journal entries for forfeiture and reissue of shares: [4]

- i] A Ltd. Forfeited 1000 Shares of ₹10 each, ₹ 7 called up, issued at a premium of 20% (to be paid at the time of allotment) for non-payment of first call of ₹ 2 per share. Out of these, 600 shares were reissued as ₹ 7 paid up for ₹ 4 per share.

ii) B Ltd. Forfeited 1000 shares of ₹ 10 each, ₹ 7 called up, issued at a premium of 20% (to be paid at the time of allotment) for non-payment of allotment money of ₹ 4 per share (including premium) and first call of ₹ 2 per share. Out of these 600 shares were reissued as fully paid in such a way that ₹ 900 were transferred to capital reserve.

19) Following is the Receipts and Payments Account of wellness club for the year ending March 31, 2020: [6]

Receipts and Payments Account

For the year ended 31st March, 2020

Receipts	Amt.(₹)	Payments	Amt.(₹)
To Balance b/d	7,200	By Salaries	32,800
To Subscriptions	59,780	By Printing and stationery	5,200
To Donations	12,120	By Rent	12,800
To sale of old Furniture (Book value Rs. 5620)	4,200	By Repairs	8,100
To Entrance Fees	4,800	By Building Purchased	45,000
To life membership Fees	18,100	By Bal c/d	6,800
To Interest on investment (@ 10% for full year)	4,500		
	1,10,700		1,10,700

Additional Information:

A) The club possessed the following assets on 1st April 2019:

Building ₹2,00,000, Furniture ₹80,000 and stock of stationery ₹1,800. Depreciation 5% is to be provided on building.

B]

Particulars	1 st April 2019	31 st March 2020
Subscriptions received in advance	1,200	2,800
Outstanding subscriptions	2,000	3,700
Outstanding rent	1,200	1,800

Prepare Income and Expenditure Account for the year ended 31st March, 2020 and the balance sheet as on that date if the club assumes only 40% of the donation to be revenue receipt

20] **A]** K K Limited obtained a loan of ₹10,00,000 from State Bank of India @ 9 % interest. The company issued ₹15,00,000, 9 % debentures of ₹100/- each, in favour of State Bank of India as collateral security. Pass necessary Journal entries for the above transactions and show it in balance sheet assuming that the company decided to record the issue of 9 % Debentures as collateral security.

B] V K Limited purchased machinery from Modern Equipment Manufacturers Limited. The company paid the vendors by issue of some equity shares and debentures and the balance through an acceptance in their favour payable after three months. The accountant of the company, while Journalising the above mentioned transactions, left some items blank. You are required to fill in the blanks. [3+3]

Date	Particulars	LF	Amt.(Dr)	Amt.(Cr)
	Machinery Account Dr. To (Purchased machinery for ₹7,00,000 from Modern Equipment Manufacturers Ltd)	
	Modern Equipment A/c Dr. Loss on Issue of 9 % Debentures Ac Dr. To To To Securities Premium Reserve A/c To Premium on Redemption of Deb. A/C (Issued ₹1,00,000 9 % debentures at a discount of 10 % redeemable at a premium of 10 % and 50,000 equity shares of ₹10 each issued at a premium of 15 %)	
 Dr. To Bills Payable (.....)	

21] H Limited issued a prospectus inviting applications for 20,000 shares of ₹ 10 each at a premium of ₹ 2 per share payable as follows:

On application ₹ 2 ; on allotment ₹ 5 (including premium) ; on first call ₹ 3 ; on second and final call ₹ 2.

Applications were received for 30,000 shares and pro rata allotment was made on the applications for 24,000 shares. Money overpaid on applications was adjusted against amount due on allotment. Ramesh, to whom 400 shares were allotted, failed to pay the allotment money and on his subsequent failure to pay first call his shares were forfeited. Mohan, the holder of 600 shares, failed to pay two calls and his shares were forfeited after the second call.

Of the shares forfeited, 800 shares were sold to Krishna credited as fully paid-up for ₹ 9 per share, the whole of Ramesh's shares being included. Pass journal entries and balance sheet. [8]

OR

Jeevan Dhara Ltd. invited applications for issuing 1,20,000 equity shares of ₹ 10 each at a premium of ₹ 2 per share. The amount was payable as follows:

On Application - ₹ 2 per share

On Allotment - ₹ 5 per share (including premium)

On 1st and Final call - Balance

Applications for 1,50,000 shares were received. Shares were allotted to all the applicants on pro rata basis. Excess money received on applications was adjusted towards sums due on allotment. All calls were made. Manu who had applied for 3,000 shares failed to pay the amount due on allotment and first and final call Madhur who was allotted 2,400 shares failed to pay the first and final call. Shares of both Manu and Madhur were forfeited. The forfeited shares were reissued at ₹ 9 per share as fully paid-up.

Pass necessary journal entries for the above transactions in the books of Jeevan Dhara Ltd. Also show how the share capital will be shown in the balance sheet.

[8]

22] The Balance Sheet of X, Y and Z who were sharing profits in proportion to their capitals stood as follows at 31st March, 2018: [8]

Liabilities	Amt.(₹)	Assets	Amt.(₹)
Sundry Creditors	13,800	Cash At Bank	11,000
Capital A/Cs		Sundry Debtors 10,000	
X 45,000		Less Provision 200	9,800
Y 30,000		Stock	16,000
Z 15,000	90,000	Plant and Machinery	17,000
		Land and building	50,000
	1,03,800		1,03,800

Y retires on 1st April, 2018 and the following readjustments were agreed upon:

- Out of insurance premium which was debited to the Profit and Loss Account ₹ 1,500 be carried forward as Unexpired Insurance.
- The Provision for Doubtful Debts be brought up to 5% Debtors.
- The Land and Building be appreciated by 20%.
- A provision of ₹ 4,000 be made in respect of outstanding bills for repairs.
- The goodwill of the entire firm be fixed at ₹21,600.

Y's share of goodwill be adjusted to that of X and Z who are going to share in future profits in the ratio of 3 : 1. Pass necessary journal entries and give the Balance Sheet after Y's retirement.

OR

A and B sharing profit and losses in the ratio of 3:2 agreed upon the dissolution of the firm on 31st March 2018 at which date their balance sheet was as follows: [8]

Liabilities	Amt.(₹)	Assets	Amt.(₹)
Sundry creditors	80,000	Cash	6,000
Bills payable	25,000	Bank	30,000
B's Loan	15,000	Stock	80,000
Reserves	24,000	Sundry Debtors	66,000
Profit and loss	11,000	Less: Prov.	6,000
Capital A/cs		Plant and Machinery	30,000
A	90,000	Land and building	33,000
B	30,000	Furniture	10,000
	1,20,000	Goodwill	15,000
		Prepaid Insurance	1,000
		Advertisement Expenditure	10,000
	2,75,000		2,75,000

The firm was dissolved on the given date and following transactions took place:

- i] B's loan was settled along with outstanding interest for 6 months @ 12% p.a.
- ii] A took over 50% of the stock at 20% discount by paying cash and remaining was sold at a profit of 30% profit.
- iii] ₹12,000 proved to be bad.
- iv] Land realized ₹1,40,000 and furniture ₹10,000.
- v] Half of the creditors accepted plant and machinery at 10% less than the book value and cash ₹5,000 in full settlement of their claims.
- vi] Remaining trade creditors were paid at a discount of 10%.
- vii] Bills Payable was paid in full.
- viii] Realisation expenses were ₹5,000.

ix] Z, an old customer, whose account was written off as bad in the previous year, paid ₹500 which was not included in the above stated book debts.

x] A contingent liability of ₹1,000 was also discharged.

Prepare Realization Account, Partners Capital Account and Bank Account.

Part - B

23] Paid ₹2,50,000 to acquire share in Shyam Ltd. And received a dividend of ₹50,000 after acquisition . Calculate the resulting cash flow and state the nature of cash flow. [1]

24] are especially interested in the average payment period, since it provides them with the sense of bill paying patterns of the firms. [1]

A] Customers

B] Shareholders

C] Lenders and Suppliers

D] Borrowers and buyers

25] What is the heading and sub- heading of Computer software? [1]

26] 'Claims against the company not acknowledged as debts is shown in the balance sheet of the company as [1]

A] Non-current liability

B] Reserves and surplus

C] Current liability

D] Contingent Liability

27] The debt equity ratio of a company is 0.8:1. State whether the long term loan obtained by the company will increase, decrease or does not change the ratio. [1]

28] "Declaration of final dividend will result in outflow of cash." True or False [1]

29] Which of the following is not an advantage of comparative statements of profit and loss? [1]

A] Analyse items of revenue and expense.

B] Analyse increase in items of revenue and expenses.

C] Analyse increase in assets and liabilities

D] Compares data related to revenue and expenses.

30] From the following, calculate Trade Receivable Turnover Ratio, if Cash Revenue from operations is 25% of total revenue from operations; Cost of revenue from operations: ₹6,00,000; Gross Profit $\frac{1}{3}$ rd of the cost, Opening Trade receivables ₹2,10,000 and closing Trade Receivables ₹1,90,000 [3]

OR

From the following information calculate operating profit ratio:

Opening Stock ₹50,000; Purchases ₹3,00,000; Revenue from operations ₹8,00,000; Purchase Returns ₹30,000; Returns from revenue from operations; ₹60,000; Selling Expenses ₹1,00,000; Administrative Expenses ₹80,000; Closing Stock ₹1,50,000 [3]

31] From the following information, prepare Comparative income Statement. [4]

Particulars	Note No.	31 st March 2016	31 st March 2015
Revenue from operations		25,00,000	20,00,000
Other income		1,00,000	5,00,000
Employee benefit expenses		60% of the Total Revenue	50% of the Total Revenue
Other Expenses		10% of employee benefit expenses	20% of employee benefit expenses
Tax rate		50%	40%

OR

Prepare a Common-Size Income Statement of 'Hari Darshan Ltd.' from the following information: [4]

Particulars	Note No.	31 st March 2019	31 st March 2018
Revenue from Operations		20,00,000	10,00,000
Purchase of Stock in Trade		7,70,000	4,20,000
Changes in Inventories		1,20,000	80,000
Other Expenses		52,000	30,000
Other Incomes		60,000	50,000
Tax Rate 50%			

32] Following are the balance sheet of Pawan Ltd.: - [6]

Particulars	Note No.	31.3.2020	31.3.2019
I. Equity and Liabilities			
1) Shareholder's Fund			
a) Share Capital		3,00,000	2,50,000
b) Reserves and surplus	1	2,07,000	1,75,000
2) Current Liabilities			
a) Short term Borrowings	2	20,000	15,000
b) Trade Payables		31,000	54,000
c) Short term Provision	3	84,000	81,000
Total		6,42,000	5,75,000
II. Assets:			
1) Non-Current Assets:			
a) Fixed Assets:			
i) Tangible Assets	4	2,70,000	2,70,000
ii) Intangible assets		50,000	30,000
b) Non-current Investments		45,000	50,000
2) Current Assets:			
a) Trade Receivables		2,67,000	2,19,000
b) Cash and cash equivalents		10,000	6,000
Total		6,42,000	5,75,000

Notes:

	31.3.2020	31.3.2019
1. Reserves and Surplus		
Balance in statement of P/L	1,97,000	1,75,000
Securities Premium	10,000	-
	<u>2,07,000</u>	<u>1,75,000</u>
2. Short Term borrowings:		
Bank Overdraft	<u>20,000</u>	<u>15,000</u>
3. Short term Provision:		
Provision for Tax	62,000	65,000
Provision for doubtful debts	22,000	16,000
	<u>84,000</u>	<u>81,000</u>
4. Tangible Assets:		
Land	1,50,000	70,000
Machinery	1,20,000	2,00,000
	<u>2,70,000</u>	<u>2,70,000</u>

Additional information:

A) Machinery of the book value of ₹60,000 was sold for ₹18,000 during the year.

B) Interim dividend paid during the year ₹25,000

C) During the year company sold 40% of its original investments at a loss of 20%.

You are required to prepare Cash Flow Statement.

General Instructions:

- 1 This question paper contains 34 questions.
2. Marks are indicated against each question.
3. Answer should be brief and to the point.
4. Answers to the questions carrying 3 marks may be from 50 to 75 words.
5. Answers to the questions carrying 4 marks may be about 150 words.
6. Answers to the questions carrying 6 marks may be about 200 words.
7. Attempt all parts of the questions together.

1] Your grandfather has retired from an organisation in which he was responsible for implementing the plans developed by the top management. At which level of management was he working? [1]

2] Which of the following best indicates the importance of business environment? [1]

- | | |
|------------------------------|-------------------------------|
| A] Identification | B] Improvement in Performance |
| C] Coping with rapid changes | D] All of them |

3] gives shape to the organisation structure [1]

- | | |
|-------------------------|-----------------------|
| A] Extent of delegation | B] Span of management |
| C] Number of employees | D] Planning |

4] "Due to worldwide recession of 2008, many of the Americans Banks like Lehman brothers bank closed down." Identify the dimension of business environment. [1]

5] The concept of relates to cost benefit analysis and study the relationship between inputs and outputs. [1]

10] Management is called process because [1]

A] It is used in manufacturing process B] It involves a series of actions

C] It is applicable of business D] All of these

11] The principles of management have universal applicability. This statement reflects that management is a pure science. True or False. [1]

12] Identify the component of promotion mix being described in the given exhibit. [1]



A] Advertising

B] Sales Promotion

C] Public relation

D] Personal selling

OR

Narayan is a wholesaler of food grains. He categorises his stock into different groups on the basis of their quality and also fixes up the price accordingly.

Identify the type of marketing function being mentioned in the given line. [1]

A] Physical Distribution

B] Transportation

C] Warehousing

D] Standardisation and

grading

13] Which of the following statements is not true? [1]

A] Increased use of debt increases financial risk of a business.

B] Increased use of debt decreases financial risk of a business.

C] Decrease in use of debt increases financial risk of a business.

D] None of the above.

14]..... refers to the act of designing and producing the container or wrapper of a product. [1]

15] When the stock market is bearish, a company may depend upon in order to raise the required funds. [1]

- A] Debentures
B] Equity Shares
C] Preference shares
D] All of the above

16] When a brand or a part of a brand is given legal protection, it is referred as generic mark. True or false. [1]

17] Jigyasa is planning to launch an online education portal. In order to understand the varied needs of the students, she conducted online survey. Based on the feedback of the survey, she has decided to offer educational packages to the prospective buyers. Identify the marketing concept being described in the given lines. [1]

- A] Production concept
B] Product Concept
C] Marketing Concept
D] Societal marketing concept

18] When Niharika had sent her servant to the market to buy a pack of chips, she asked him to specially bring yellow coloured packet of chips of a particular brand. Identify the function of packaging being described in the above line. [1]

- A] Helps in product identification
B] Provides protection to product
C] Facilitate the use of product
D] Assists in promotion of product

19] It is a short term, negotiable, self-liquidating instrument which is used to finance the credit sales of firms. [1]

- A] Commercial bill
B] Commercial Papers
C] Call money
D] None of the above

20] The process of holding shares in electronic form is known as [1]

- A] Demutualisation
B] Dematerialisation
C] Speculation
D] none of the above

21] "Art is considered with personal application of knowledge." In the light of this statement, compare all the features of art with management and prove that " it is an art". [3]

22] XYZ Ltd is a manufacturer of wall clocks and the company is opting a good control system in order to achieve targets on time. In the context of this, give some of the advantages of controlling. [3]

OR

“An ideal control technique is the one that checks every bit of performance.”

Comment

23] Resolutions Private Ltd. is a publishing company. Its book on Business studies for Class XII is in great demand. As a result, the employees in the market department are always racing against time. The employees have to work overtime and on holidays to cater to the demand.

Managers in the marketing department are under stress as they have to handle more than two territories. The work stress has led to dissatisfaction among the employees and managers.

A] Name and explain the step of staffing process which has not been performed properly.

B] State the next two stages immediately following the step identified in part 'a' [3]

24] “Financial planning is a financial blueprint of an organisation’s future operations.’ Explain the twin objectives of financial planning in the light of this statement. [3]

OR

Mr. Axe, one of the directors of XYZ Ltd. Knew that bonus shares were to be announced in the next meeting and he expected the price to rise. He bought 1,00,000 shares from the stock market. By the end of few months, price rose by ₹ 9. He sold his shares and made huge profit.

i) Name the act of Mr. Axe.

ii) Is he permitted? [3]

25] "Ghoom Pvt. Ltd." is a travel agency owned by twin brothers Dev and Baldev in Ahmedabad in order to promote their business initially they had offered liberal credit to their clients. At the same time they raised loans from many banks to meet their increased capital requirements. They opted for debt capital because it is considered the cheapest of all sources. However now the company's cash flow proves to be inadequate to meet its financial obligations [4]

a) Comment upon the working capital requirement of "Ghoom Pvt. Ltd." with the help of factor stated in the paragraph.

b) What kind of risk is a business subject to if its unable to meet its financial obligations?

c) Why debt is considered the cheapest of all sources?

d) Name and explain the decision that determines the overall cost of capital and the financial risk of the enterprise.

OR

Varun Ltd. Is a company manufacturing edible oil. It has been consistently earning good profits for many years. This year too, it has been able to generate enough profits. There is availability of enough cash in the company and good prospects for growth in future. It is a well-managed organisation and believes in quality, equal employment opportunities and good remuneration practices. It has many shareholders who prefer to receive a regular income from their investments. It has taken loan of ₹40 lakhs fro IDBI bank and is bound by certain restrictions on the payment of dividend according to the terms of loan agreement.

The above discussion about the company leads to various afctors which decide how much of the profits should be retained and how much has to be distributed by the company.

Quote the lines from the above discussion identify and explain any four such factors. [4]

26] HR Manager of Gangotri Ltd. Is frequently receiving the calls from workers that the new machine, which was installed last week is complicated to handle.

The workers are unable to handle new machine. Briefly explain how manager can resolve this issue? [4]

27] In an organisation employees always feel they are under stress. They take least initiative and fear to express their problems before the manager. What do you think is wrong with the manager? [4]

28] Neeraj has been working as a sewing machine operator in an export house for the past ten years. His basic work is to seam the parts of a garment together, and attach buttons, hooks, zippers and accessories to produce clothing. Considering the fact that Neeraj is an experienced operator, he is well versed with the fundamentals of industrial production and possesses good communication skills. The plant superintendent in the factory recommends Neeraj's name to the production manager for the post of supervisor which will fall vacant after a month on the retirement of the present supervisor. Consequently, Neeraj is assigned the post of supervisor and his salary is increased accordingly. Moreover, as per the policy of the export house, he is offered free medical aid and education to his two children.

In the context of above case:

A] Identify the type of source of recruitment used by the export house to fill up the post of supervisor. Give any two advantages of using this source.

B] Identify the types of financial incentives offered to Neeraj by quoting lines from the paragraph. [4]

OR

Jack Welch was the chairman and CEO of General Electric between the year 1981 and 2001. During his tenure at GE, the company's value rose by 4000%. When he retired from GE he received a severance payment of \$417 million, the largest such payment in history. He once remarked "If you pick the right people and give them the opportunity to spread their wings and put compensation as a carrier behind it, you almost don't have to manage them." [4]

In the context of the above case:

A) Identify the style of leadership style he is referring to in the above lines.

B) State any three features of the style of leadership as identified in part(a) of the question.

C) What are the other types of leadership style?

29] Explain the various money market instruments.

30] Pooja purchased a bottle of tomato sauce from the local grocery shop. The information provided on the bottle was not clear. She fell sick on consuming it. She filed a case in District Forum under Consumer Protection Act and got the relief. [4]

A) Identify the important aspect neglected by the marketer in the above case.

B) Explain briefly the functions of the aspect identified in A) above

31] 'Home Creation Ltd' is a well known chain of large departmental store offering various types of products under one roof. The company owns 50 stores in various parts of the country. Each store is placed under the charge of manager who is allowed to run their stores autonomously by deciding upon the products which may be promoted, appointment of staff, ways to handle customer complaints etc. as these managers have a deeper knowledge of the local situations, it enables them to take these decisions effectively keeping in view the local circumstances and customers' need. This approach helps to improve customer service and at the same time serves to boost morale and increase the job satisfaction of the store managers as it empowers them to innovate and use their initiatives. [6]

In the context of above case:

A] Identify and explain the policy followed by 'Home Creations Ltd' to run their stores successfully.

B] Also, give any three points highlighting the importance of the approach followed as identified in part [A] of the question

32] " Money Spent on advertising is not a waste but an investment." Do you agree with this view? Give reason in support of your answer. [6]

OR

What is meant by 'Sales Promotion'? Explain any five sales promotion techniques with an example of each which a business house may use to promote its products. [6]

33] Principles of Taylor and Fayol are mutually complementary. One believed that management should not close its ears to constructive suggestions made by employees while the other suggested that a good company should have an employee suggestion system, whereby suggestions which result in substantial time or cost reduction should be rewarded. Identify and explain the principles of Taylor and Fayol referred in the above para. [6]

34] Mohan and Sohan are running a fast food outlet. They are discussing and deciding the targets of their business for the coming year and the ways and means of achieving these targets.

A] Identify the function of the management involved here.

B] Quote the lines from the above para which help you to identify this function.

C] State the step followed in the process of this function of management.

OR

Is planning actually worth the huge costs involved? Explain. [6]

General instructions:

1 This question paper contains two parts:

Part A – Macro economics (40 marks)

Part B – Indian Economic Development (40 marks)

2 Marks for questions are indicated against each question.

3 Question No. 1 -10 and Question No. 18-27 (including two Case Based Question) are 1 mark questions and are to be answered in one word/ sentence.

4 Case Based Questions (CBO's) are Question No 7-10 and Question No. 25-27.

5 Question 11-12 and Question No. 28-29 is 3 marks questions and are to be answered in 60-80 words each.

6 Question No 13-15 and Question No 30-32 are 4 marks questions and are to be answered in 80-100 words each.

7 Question No. 16-17 and question No. 33-34 are 6 marks questions and are to be answered in 100-150 words each.

8 Answers should be brief and to the point and the above word limit be adhered to as far as possible.

PART A – MACROECONOMICS

1 _____ in public expenditure and _____ in taxes are two fiscal policies to control inflationary gap.

(Fill up the blank with correct alternative)

[1]

- a. Decrease, increase
- b. Increase, decrease
- c. Decrease, decrease
- d. Increase, Increase

Alternatives

- a] A-i b] B-ii c] C-iii d] D-iv

5 Identify which of the following statement is true? (Choose the correct alternative) [1]

- a. Revenue expenditure refers to the expenditure which neither creates any asset nor causes reduction in any liability of the government.
- b. Capital expenditure refers to the expenditure which neither creates any asset nor causes reduction in any liability of the government.
- c. Revenue expenditure refers to the expenditure which either creates an asset or causes a reduction in the liabilities of the government.
- d. Revenue receipt refers to those receipts which either create a liability or cause a reduction in the assets of the government.

6 Unilateral transfers made to abroad will be recorded as a _____ item of BOP on _____ account. (Fill up the blanks with correct alternative) [1]

- a debit, capital c debit, current
- b credit, current d credit, capital

Read the following news report and answer Question 7-10 on the basis of the same:

The RBI on 11th December, '20 announced a slew of measures in order to provide relief for the ongoing Corona virus outbreak in India. RBI announced that it was cutting the repo rate by 0.75% to 4.4. The repo rate was earlier 5.15, last being cut in October 2019. The regulator also announced that it would cut the reverse repo rate by 0.90%. On a daily average, banks had been parking Rs 3 lakh crore with the RBI. The current reverse repo rate was 4%. The RBI also announced that the cash reserve ratio (CRR) would be reduced by 1% to 3%. This would be applicable from Mach 28 and would inject Rs 1, 37,000 crore.

The Economic Times December 11th 2020

7 Cutting the repo rate by the RBI will _____ (increase/decrease) the money flow in the market. (Choose the correct alternative) [1]

8 Cutting the reverse repo rate by the RBI will _____ (increase/decrease) the money flow in the market. (Choose the correct alternative) [1]

9 Reduction in CRR will lead to:

- a fall in aggregate demand
b increase in aggregate demand
c No change in aggregate demand
d increase in general price level
(Choose the correct alternative) [1]

10 To overcome the financial crisis generated due to covid 19 the RBI facilitated the monetary _____ (expansion/contraction) through decrease in the LRR, RR, R-RR. (Choose the correct alternatives). [1]

11 State with valid reasons, which of the following statements are true or false: [3]

- a. Retirement pension and contribution to PF by employer are included in the National income.
b. Milk and butter are always intermediate goods.

12 State, giving valid reasons, whether the following statements are true or false: [3]

- a. Investment from abroad will be entered on the credit side in the capital account.
b. There is no difference in balance of trade and balance of current account on BOP.

OR

Defend or refute the statement, with valid argument.

'Consultancy fees paid to a foreign expert is included in domestic income.'

13 What is depreciation? [1]

Calculate depreciation from the following table. [3]

Particulars	Rs in crores
i) NNP at FC	4000
ii) GDP at MP	5000
iii) Net indirect tax	300
iv) Net factor income from abroad	200

14 Given $C = 400 + 0.9Y$ as the consumption function where C is the consumption expenditure and Y is the National Income. And I (Investment expenditure) is Rs 4,000 crores.

Find: (i) Equilibrium Y

(ii) What will be S and C at equilibrium Y? [4]

OR

Define: i) Involuntary unemployment ii) Investment multiplier

15 With the introduction of 'Jan Dhan Yojana' by the Government of India, millions of people have opened their bank account. This has enhanced deposits of the commercial banks. It leads to expansion of credit in the financial market.

In the above context, write how commercial banks create money. [4]

16 a. To whom does the phrase 'lender of the last resort' refer? Justify your answer. [3]

b. National income increases by Rs 2500 crore when an additional investment of Rs 500 crore is made. Calculate the value of investment multiplier. [3]

OR

a. Why does demand for foreign exchange arise for speculative activities? [3]

b. Explain the components of money supply. [3]

OR

Read the following statements – Assertion (A) and Reason (R). Choose one of the correct alternatives given below:

Assertion (A): A good indicator of economic growth is steady increase in the Gross Domestic Product (GDP).

Reason (R): The GDP of a country is derived from the different sectors of the economy, namely the agricultural sector, the industrial sector and the service sector.

Alternatives:

- a. Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
- b. Both Assertion (A) and Reason (R) are true and Reason (R) is not the correct explanation of Assertion (A).
- c. Assertion (A) is true but Reason (R) is false.
- D Assertion (A) is false but Reason (R) is true.

21 Read the following statements – Assertion (A) and Reason (R). Choose one of the correct alternatives given below: [1]

Assertion (A): Privatisation is a process of opening a large part of the economy for non-government sector.

Reason (R): Role of public sector was reduced in the New Economic Policy of the country. The numbers of industries exclusively reserved for the public sector were reduced from 17 to just 3 industries.

Alternatives:

- a. Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
- b. Both Assertion (A) and Reason (R) are true and Reason (R) is not the correct explanation of Assertion (A).
- c. Assertion (A) is true but Reason (R) is false.
- d Assertion (A) is false but Reason (R) is true.

22 From the set of events/system given in column I and corresponding relevant fact given in column II, choose the correct pair of statement. [1]

	Column I		Column II
A	Financial sector reforms	i)	Reduction in taxes
B	Foreign Exchange reforms	ii)	Devaluation of Rupee
C	Industrial Sector Reforms	iii)	Change in role of RBI
D	Tax Reforms	iv)	Removal of export duties

Alternatives:

- a) A-i b) B-ii c) C-iii d) D-iv

23 Annual growth rate of population is highest in _____ [1]

(Choose the correct alternative)

- a. India c. Pakistan
b. China d. Afghanistan

Read the following hypothetical Case study, carefully and answer the question numbers 24-27 on the base of the same.

Diversification has tremendous impact on Indian agriculture. Agricultural diversification is regarded as an important means to increase output, to generate more employment and to ensure sustainability of natural resources. Agricultural diversification may result from many reasons such as the need for reducing risk, change in demand, availability of new techniques, change in government policy, change in relative prices of agricultural products etc.

Farmers may switch over to more drought resistant crops to reduce risk. Similarly, farmers take up livestock farming because of greater demand for animal products (dairy, meat, eggs). Sometimes the farmers diversify crops that can meet export demand. Small landholders have benefited immensely from agricultural diversification because the high value food products give regular and high returns to the small farmers. Agricultural diversification may also result from the availability of new techniques as happened during the Green Revolution.

- 24 Agricultural diversification helped to increase _____ (output, employment/ energy resources) [1]
- 25 Agricultural diversification in India in recent years has slowly shifted in favour of _____ (high-value food commodities/ cereals). [1]
- 26 Farmers diversify crops to get _____ (easy loans from bank/ regular, quick and high returns). [1]
- 27 Indian agricultural developments started in years back due to _____ (introduction of green revolution/ agricultural diversification). [1]
- 28 "Decline of handicraft industry adversely affected the Indian economy." Defend the statement with valid arguments. [3]

OR

Why there is a need for protection of small-scale industries after independence? Discuss the steps taken by the government.

- 29 'Great Leap Forward' campaign was initiated by Mao. Discuss the steps taken by him to modernise China's economy. [3]
- 30 "The process of globalisation has produced positive as well as negative results." Explain the given statement. [4]
- 31 "In May, 2020 when people started returning to their homes in rural India after a countrywide lockdown was relaxed, over 36 million household sought work under the scheme MGNREGA which is most likely this month, in the past five financial years."
- Do you agree with the statement? Justify the rationale of the given statement. [4]

OR

"Investment in human capital contributes to growth of the economy."
Discuss briefly any two major steps taken by the govt. of India

32 What is casualisation of workforce? Compare and analyse the given data to show the increasing casualisation of workforce. [4]

Trends in employment (status wise)			
Status	1972-73	1999-2000	2011-12
Self – employed	61.4	52.6	52.0
Regular salaried employee	15.4	14.6	18.0
Casual Workers	23.2	32.8	30.0
Total	100.0	100.0	100.0

33 a. “Self-Help Groups (SHGs) have emerged because of inadequacy of formal credit delivery mechanism.

Discuss the rationale of the given statement with valid reason. [3]

b. Women suffer many disadvantages as compared to men in the health care.”

Establish the rationale of the given statement. [3]

OR

a. Why have resources become extinct? [2]

b. Analyse the state of health indicators of India in comparison with other countries. [4]

Indicators of Health in India in comparison with other countries, 2014-2015			
Indicator	India	USA	Sri Lanka
Infant Mortality Rate/1000 live births	38	6	8
Birth by skilled attendants (% of total)	74	99	99
Health expenditure as % of GDP	4.7	17	3.5
Govt health spending to total govt spending	5	21.3	11.2

34 State, giving valid reasons whether the following statements are true or false.

a. China is the most populated country because its annual growth rate of population is also the highest. [2]

b. In India poverty is causing environmental degradation. [2]

c. The Covid 19 pandemic situation significantly improves air quality in different cities across the world. [2]

General Instructions:

- Questions Paper comprises three sections- **A, B and C.**
- Section A – Question no.1 to 15 are Objective Type Questions of 1 mark each. Attempt any 14 questions. Write the correct answer only in your answer sheets.
- Section B - Question no.16 and 17 are Short Source Based and Graph Based questions of 3 mark each. **Answer any three questions out of 4.** Each of this sub-questions carry 1 mark.
- Section C – Questions 18 to 22 are **short answer questions**, carrying 3 marks each. Answer to each question should not exceed 80 words.
- Section C - Question no. 23 to 27 are **long answer questions** of 5 mark each. Answer to each question should not exceed 120-150 words.
- Question no. 28 and 29 are related to location and labeling and identification of geographical features on maps respectively, carrying 5 marks each.
- Outline map of India and World provided to you must be attached with your answer book. Use of template or stencils for drawing outline maps is allowed.

SECTION - A

1. Fill in the blanks: 1

Developed countries take _____ time to double their population as compared to developing countries.

2. In which of the following approaches the grand generalizations and applicability of universal theories to explain the human condition were questioned? 1

- | | |
|--------------------------------|---------------------------------|
| a. Exploration and description | b. Regional analysis |
| c. Spatial organization | d. Post-modernism in Geography. |

10. In which of the following period education and knowledge- based Indian emigration has made Indian Diaspora one of the most powerful diaspora in the world? 1

- a. During colonial period
- b. During second wave
- c. During third wave
- d. After liberalization, in the 1990s

11. Which of the following states of India has lowest female child sex ratio 0-6 years? 1

- a. Gujarat
- b. Haryana
- c. Himachal Pradesh
- d. Jammu & Kashmir

12. Which one of the following is not the part of the definition of a town as per census of India? 1

- a. Population density of 400 persons per sq km.
- b. Presence of municipality, corporation, etc
- c. More than 75% of the population engaged in primary sector.
- d. Population size of more than 5000 persons.

13. Examine which of the following problems are generally confronted by the villages of South Asia. 1

- a. Lack of facilities due to high density
- b. Political instability
- c. Occurrence of floods and droughts
- d. Fear of wild animals

14. Age and skill selective migration from rural areas has not affected adversely to which of the following attribute? 1

- a. The whole burden of agricultural work has to be borne by the old population in the rural areas
- b. Downfall recorded in the working population in rural areas
- c. Old people and women are left behind in the place of origin
- d. Growth in remittance.

15. Which one of the following group of cities have been arranged in the sequence of their ranks i.e. 1, 2, 3 and 4 in size?

1

- a. Greater Mumbai, Kolkata, Delhi, Chennai
- b. Delhi, Greater Mumbai, Chennai, Kolkata
- c. Greater Mumbai, Bangalore, Kolkata, Chennai
- d. Kolkata, Greater Mumbai, Chennai, Bangalore

SECTION - B

(Source Based Questions)

16. At Singareni, Canaries to miners' rescue

Singareni collieries, the country's premier coal production company, still uses canaries to detect the presence of deadly carbon monoxide in underground mines. Miners collapse and often die even if small quantities of the highly poisonous CO are present in the air. Though, miners speak lovingly of the canaries, the underground experience is not at all pleasant for the birds. When lowered into mines with CO presence, the birds show distress symptoms such as ruffling of feathers, pronounced chirping and loss of life. These reactions occur even if 0.15 per cent of CO is present in the air. If the content is 0.3 per cent the bird shows immediate distress and falls off its perch in two to three minutes. A cage of birds is a good indicator in air containing more than 0.15 per cent CO, said a coal miner.

The sophisticated hand held CO detectors introduced by the company can detect CO concentrations from as low as 10 ppm to as high as 1,000 ppm. But despite this, the miners trust the birds, who have saved the lives of several of their predecessors.

Answer any 3 questions

3x1=3

a. In which of the following states Singareni coal mine is located

- i. Telangana
 ii. Madhya Pradesh
 iii. Chattisgarh
 iv. Jharkhand

b. Use of Canaries to detect the presence of poisonous gases in underground mines should be stopped because

- i. Canaries are not a reliable option
 ii. It is a cruel act against wildlife
 iii. Behaviour of canaries have changed
 iv. It is an endangered species

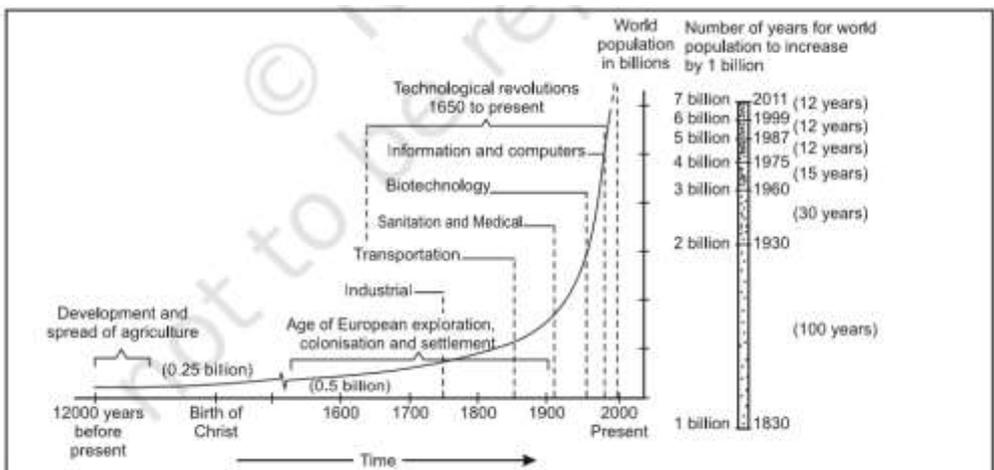
c. In Singareni collieries, Canary birds are used to detect which gas

- i. Sulphur dioxide
 ii. Carbon dioxide
 iii. Carbon monoxide
 iv. Methane

d. Which of the following minerals occur in rock sequences, mainly of 2 geological ages, namely Gondwana and Tertiary deposits

- i. coal
 ii. petroleum
 iii. natural gas
 iv. none of the above

17. Study the following graph carefully and answer the following questions:



Answer any 3 questions**3x1=3****a. What was the population doubling time from 5 to 6 billion**

- i. 12 years
- ii. 15 years
- iii. 30 years
- iv. 100 years

b. What was the main reason for the population growth till 19 00

- i. transportation and bio-technology
- ii. sanitation and medical
- iii. bio-technology and information technology
- iv. transportation and information technology

c. The annual growth rate of population in India is

- i. 1.36%
- ii 1.46%
- iii. 1.64%
- iv. 1.74%

d. Population decline is also a matter of concern because

- i. life expectancy increases due to epidemics
- ii. Improvement in health care facilities
- iii. large scale in migration
- iv. it indicates that resources that had supported a population earlier are now insufficient to maintain the population

SECTION - C**(Short Answer and Long Answer Questions)****18.** Justify the high demand of water for irrigation in India. **3****19.** Explain how Human Geography in the early 20th century has become more integrative and inter-disciplinary in its approach. **3****20.** Explain any three features of quaternary services. **3****OR**

How do KPO industries function? What is the difference between KPO and BPO?

3

21. Identify the main reasons of male and female migration separately. 3

22. Urban waste disposal in major metropolitan cities of India has become a major cause of concern in recent years ---- Give examples. How can we overcome this problem? 3

OR

Explain any three major problems faced by the slum dwellers in India. 3

23. Urban –rural linkage are of crucial importance for the sustainability of human settlements ---- why? How do you think a desirable linkage can be created? 5

24. "Development of few regions, individuals brought about in a short span of time leads to poverty and malnutrition for many along with large scale ecological degradation." ---- Is development class biased? 5

OR

What do you understand by the term 'human development'? 5

25. Explain two major characteristic features of mineral resources in India.

Describe the broad belts of minerals in India. 5

26. Differentiate between nomadic herding and commercial livestock rearing, stating any five points of distinction. 5

27. Explain the main aims of Bharmaur Tribal Area Development Plan. 5

OR

Introduction of canal irrigation has brought about a perceptible transformation in the agricultural economy of the region--- give reasons in support of the statement.

5

Map Based Questions

28. On an outline map of India, locate and label ANY FIVE of the following:

5x1=5

1. A state with lowest level of HDI
2. Chennai – Mega city
3. Ratnagiri Iron Ore Mines
4. Hazaribagh Copper Mines
5. Raniganj Coal Field
6. Mathura Oil Refinery
7. Balaghat Manganese Mines.

29. With the help of the following key, identify the areas marked as A, B, C, D and E on the given outline map of the world. Write the correct name in your answer sheet.

5x1=5

- A** Region in Africa practising Nomadic Herding
- B** Region of Europe practising Commercial Grain Farming
- C** Mega City of Asia
- D** Region of North America practising Subsistence Gathering
- E** Mega City of South America.

17.1 Name the country which was India's closest friend during the Cold war? 1

- a) USA
b) Soviet Union
c) United Kingdom
d) China

17.2 The policy of India's impressive economic growth rate made the country an attractive economic partner for a number of countries including _____ 1

- a) Russia
b) China
c) USA
d) France.

17.3 What was India's policy during the post cold war? 1

- a) Isolationism
b) Liberalise its economy and integrate with the USA
c) Liberalise its economy and integrate with the global economy
d) Non Alignment Policy

17.4 Mention the period of beginning of US hegemony. 1

- a) 1990
b) 1991
c) 1993
d) 1992

18. Read the following passage carefully and answer the questions that follow:

[1+1+1+1=4]

There were many acts of dissent and resistance to the Emergency. Many political workers who were not arrested in the first wave, went 'underground' and organised protests against the government. Newspapers like the Indian Express and the Statesman protested against censorship by leaving blank spaces where news items had been censored. Magazines like the Seminar and the Mainstream chose to close down rather than submit to censorship. Many journalists were arrested for writing against the Emergency. Many underground newsletters and leaflets were published to bypass censorship. Kannada writer Shivarama Karanth,

awarded with Padma Bhushan, and Hindi writer Fanishwarnath Renu, awarded with Padma Shri, returned their awards in protest against the suspension of democracy. By and large, though, such open acts of defiance and resistance were rare.

18.1 Name the two newspapers that protested against the censorship by leaving blank spaces. 1

- a) Indian Express and The Statesman
- b) Indian Express and The Hindu
- c) Indian Herald and The Hindu
- d) The Hindustan Time and The Satesman

18.2 Why did people began to protest? 1

- a) Against inflation
- b) Against Internal conflict
- c) Against declaration of emergency
- d) Against atrocities towards the minorities.

18.3 Magazines like _____ chose to close down rather than submit to censorship. 1

- a) India Today and The Seminar
- b) The Seminar and The Mainstream
- c) The Caravan and India Today
- d) Frontline and The Caravan.

18.4 Which Kannada write returned his Padma Bhusan award in protest against the suspension of emergency? 1

- a) Fanishwarnath Renu
- b) S.S. Dhingsa
- c) Uday Shankar
- d) ShivramaKarnath

Section - C

19. What was the Cuban Missile Crisis? 2
20. Highlight features of the old system of social welfare that got destroyed due to shock therapy. 2
21. State two Objectives of Niti Ayog. 2
22. What two challenges was faced by India at the time of Independence? 2

Section - D

23. Describe any two constraints of US Hegemony. 4

OR

Do you justify the attack on Iraq in the name of 'attack on terrorism'? Support your answer with any two arguments.

24. Mention any four features of the European Union. 4
25. What are the main differences between the SAARC and the European Union. 4
26. Describe any two advantages and two disadvantages of 'coalition' Government in India. 4

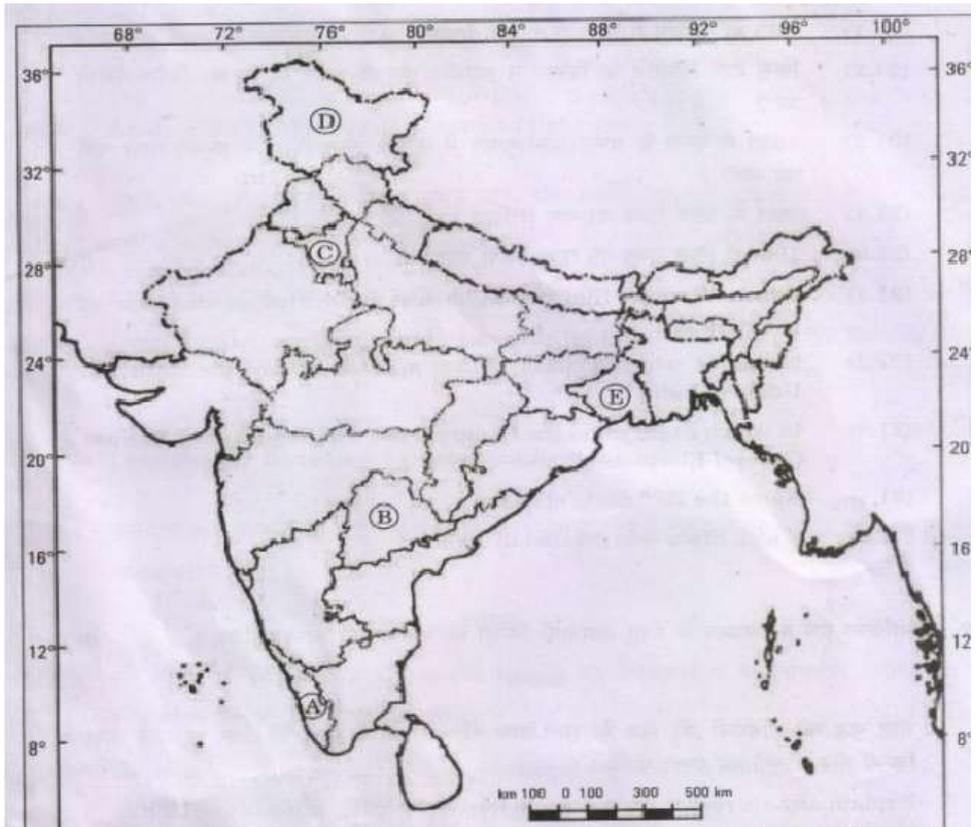
OR

"The early seventies of the 20th century were very favourable for Mrs. Indira Gandhi". Do you agree? Support your answer with any four arguments.

27. Describe any four circumstances for proclamation of emergency in 1975? 4

SECTION - E

28. In the given political outline map of India, five states have been shown as (A), (B), (C), (D) and (E). Identify them on the basis of the given information. Give their correct names with the respective serial number of the information and alphabet concerned in the format below: [1+1+1+1+1=5]



- i. The State which came into existence due to bifurcation at the time of partition in 1947.
- ii. A Princely State whose ruler resisted its merger with India.

- iii. The State where the Congress party failed to win a majority in the First general Elections of India.
- iv. The 29th State of India
- v. The State that was created in 1966.

Sr. Number of the information used	Alphabet Concerned	Name of the State

29. Study the cartoon given below carefully and answer the questions that follow.
 Answer to 2 mark questions should not exceed more than 40 words.



- i. Who has been represented by the cartoon wearing a cap?
- ii. "You posed a potential threat." What does this refer?
- iii. What does the cartoon try to speak? Which event can be correlated with this cartoon? [1+2+2=5]

SECTION - F

30. How far did UN perform its role successfully in maintaining peace in the world? Explain. 6

OR

Describe the composition of the UN Security Council. What are the major differences in the privileges given to its permanent members?

31. Why was emergency declared in India on 25th June 1975. 6

OR

Explain any six factors responsible for the defeat of the Congress Party in 1977 elections.

32. Explain the three challenges that India faced during the independence. 6

OR

Explain the consequences of the partition

General Instructions:

- Answer all the questions. Some questions have an internal choice. Marks are indicated against each questions. This question paper comprise of six sections.
- Section A: Question numbers 1 to 16 are objective type questions carrying 1 mark and should be answered in one word or one sentence each (Attempt any 15)
- Section B: Question numbers 17 to 19 are Case Based/Source Based having Multiple Choice questions. Each question has 4 sub-part. Attempt any three sub-parts from each question.
- Section C: Answer to questions carrying 3 marks (Question 20 to 23) should not exceed 100 words each.
- Section D: Answer to questions carrying 8 marks (question 24 to 26) should not exceed 350 words each.
- Section E: Question number 27 to 29 are Source-based questions carrying 5 marks each.
- Section F: Question number 30 is a map question that includes the identification and location of significant test items. Attach the map with the answer book.

SECTION A

Attempt any 15 questions.

1. The bust of bearded man figure was found in which of the following archaeological site? 1
2. Under the terms of which pact Civil Disobedience was called off and prisoners were released? 1

11. Consider the following statement and give the correct statement: 1

- a. Jallianwala Bagh massacre took place in 1919 as a result of Rowlatt Satyagraha.
- b. The Committee for Rowlatt Act was headed by Sir Sidney Rowlatt.
- c. Both a and b
- d. Neither a nor b

12. Match the following : 1

List I

List II

- (i) Bahadur Shah
(ii) Kunwar Singh
(iii) Bijris Qadr
(iv) Shah Mal

- (a) Lucknow
(b) Barout
(c) Delhi
(d) Bihar

Option:

- (i) (ii) (iii) (iv)
A) (d) (c) (a) (b)
B) (b) (a) (d) (c)
c) (a) (b) (c) (d)
d) (c) (d) (a) (b)

13. The positive feature witnessed during the revolt of 1857 was _____ . 1

14. Consider the following pairs: 1

1. Alvars and Nayanars : Tamil Nadu
2. Lingayats : Karnataka
3. Kabir Bijak : Rajasthan

Which of the following pairs is/are correctly matched ?

- A. 1 and 2 only
B. 2 only
C. all 1,2,3
D. 3 only

15. Which Vijayanagar King constructed the town of Nagalapuram ? 1

- a. Harihar
b. Narshimhadeva
c. Krishnadeva Raya
d. Rama Raya

16. By the 1930's the congress had accepted which language to be the National language - 1

- a. Sindhi
b. Hindustani
c. Hindi
d. English

SECTION B

17. (1+1+1=3)

Read the following passage carefully and answer any three questions :

In the few Harappan sites that continued to be occupied after 1900 BCE, there appears to have been a transformation of material culture, marked by the disappearance of the distinctive artefacts of the civilisation weights, seals, special beads. Writing, long distance trade, and craft specialisation also disappear. In general, far fewer materials were used to make far fewer things. House construction techniques were no longer produced. Overall, artefacts and settlements indicate a rural way of life in what are called "Late Harappan" or "Successor Cultures"

a) The Harappan writings have been found on variety of objects such as seals, copper and terracotta tablets and jewellery. Which of the following is correct regarding Harappan script:

- (i) The Harappan script was written from left to right.
(ii) It has too many signs-somewhere between 375 and 400.
(iii) It was alphabetical.
(iv) All of the above

b) Consider the following statement about Harappan seals:

- (i) Seals and sealings were used to facilitate long distant communication.
- (ii) The purpose of seals was to ensure that if the sealing was intact one could be sure that the goods have arrived safely.
- (iii) Only A
- (iv) Both A and B

c) Consider the following statement:

- (1) Most Harappan sites are located in semi-arid lands.
- (2) Harappan practiced irrigation.

Which of the above statement is/are correct about Harappan?

- (i) Only I
- (ii) Only II
- (iii) Both I and II
- (iv) Neither I nor II

d) Consider the following pairs:

- (1) Shortughai: Afghanistan
- (2) Banawali : Rajasthan
- (3) Kalibangan : Rajasthan

Which of the above pair is/are correctly matched

- (i) 1 and 2 only
- (ii) 2 only
- (iii) 1 and 3 only
- (iv) 2 and 3 only

18.**(1+1+1=3)****Read the following passage and answer any three question that follow:**

Akbar quest for religious knowledge led to interfaith debates in the ibadat khana at Fatehpur Sikri between learned Muslims, Hindus, Jainas, Parsis and Christians. Akbar's religious views matured as he queried scholars of different religions and sects and gathered knowledge about their doctrines.

a) The practice of 'Jharoka Darshan' was introduced by-

- (i) Akbar (ii) Humayun
(iii) Jahangir (iv) Dara Sukoh

b) Which of the following are correct regarding Ibadat Khana?

- (1) It was built in 1575 in Fatehpur Sikri.
(2) It was opened for all religions since beginning.

Select the correct answer :

- (i) 1 only
(ii) 2 only
(iii) Both of the above
(iv) None of the above

c) Who proclaimed a new religion called Din-i-Ilahi?

- (i) Akbar (ii) Babur
(iii) Jahangir (iv) Aurangzeb

(d) Consider the following statement and give the correct statement:

- (i) Akbar Nama was written in Persian language
(ii) The Mahabharat was Translated as the Razmnama(Book of wars)
(iii) Neither A nor B
(iv) Both A and B

19. (1+1+1=3)

Read the following passage and answer any three that follows:

"Tomorrow we shall break the salt tax law"

On 5th April 1930, Mahatma Gandhi spoke at Dandi when I left Sabarmati with my companions for this seaside hamlet of Dandi, I was not certain in my mind that we would be allowed to reach this place. Even while I was at Sabarmati there was a rumour that I might be arrested. I had thought that the government might perhaps let my party come as far as Dandi ,but not me certainly.

a) Which of the following is true about Salt March:

- (i) This event brought Mahatma Gandhi to World attention.
- (ii) It was first Nationalist activity in which women participated in large number.
- (iii) It forced upon British the realisation that their Raj would not last forever
- (iv) All A,B,C are correct

b)In which year did the Salt March started:

- (i) 10 march 1930
- (ii) 11 march 1930
- (iii) 12 march 1930
- (iv) 13 march 1930

c) How much tax was imposd on salt by British government ?

- (i) 40
- (ii) 65
- (iii) 30
- (iv) 10

d) In which of the nfollowing movements did Mahatma Gandhi make the first use of hunger strike as a weapon?

- (i) non – cooperation movement, 1920-22
- (ii) Rowlatt Satyagraha, 1919
- (iii) Ahmedabad Strike, 1918
- (iv) Bardoli Satyagraha

SECTION C

- 20.** "Abu'l Fazl has describe the ideal of Sulh-i-Kul of Akbar as the corner-stone of his enlightened rule". Justify. **3**
- 21.** Visual images and literature as much as the writing of history have helped in keeping alive the memory of the revolt of 1857. Assess this statement. **3**
- 22.** Describe the different arguments made in favour of protection on of depressed class in the Constituent Assembly. **3**
- 23.** The Lingayats challenged the idea of caste and the 'pollution' attributed to certain groups by Brahmanas- Critically examine the statement. **3**

SECTION D

- 24.** How is Mahabharata a Dynamic text? **(2+6)**

OR

How important were gender differences in early society? Give reasons for your answer.

- 25.** In the history of nationalism Gandhiji was often identified with the making of a nation. Describe his role in the freedom struggle of India. **8**

OR

"Whenever Gandhiji went rumours spread of his miraculous powers." Explain with examples.

- 26.** "Within the Constituent Assembly of India the language issue was intensely debated". Examine the views put forward by members of the assembly on the issue. **8**

OR

How was the centre made more powerful and strong by the Constituent Assembly?

SECTION E

27. Read the following source carefully and answer the questions that follow:

5

We get significant information from Azamgarh proclamation. 25 August, 1857 as to what the rebels wanted. Section III. Regarding Public servants

It is not a secret thing, that under the British Government, native employed in the civil and military service have little respect, low pay and no manner of influence, and all the post of dignity and emolument in both the departments are exclusively bestowed on English men.....Therefore, all the native in the British service ought to be alive to their religion and interest, and adjuring their loyalty to the English side with the Badshahi Government and obtain salaries of 200 and 300 rupees for the present, and be entitled to high post in the future.

(27.1) How did the introduction of English affect the artisans? 2

(27.2) How would the condition of the artisans improve under the Badshahi Government? 1

(27.3) Why did the rebel proclamation repeatedly appeal for? 2

28. Read the following source carefully and answer the questions that follow:

5

Ambedkar on separate electorates

In response to Mahatma Gandhi's opposition to the demand for separate electorates for the Depressed classes, Ambedkar wrote,

Here is a class which is undoubtedly not in a position to sustain itself in the struggle for existence. The religion to which they are tied, instead of providing them an honourable place, brands them as lepers, not fit for ordinary intercourse.

Economically, it is a class entirely dependent way of living open to it.

(28.1) Examine the arguments given in favour of separate electorate for depressed classes, by Dr. Ambedkar and give your reactions. **2**

(28.2) Describe the position of economically depressed class. **2**

(28.3) Suggest some other ways to provide an honourable position to depressed classes. **1**

29. Read the following source carefully and answer the questions that follows:

5

A Ryot Petitions:

This is an example of a petition from a ryot of the village of Mirajgaon, Taluka Karjat, to the collector, Ahmednagar, Deccan Riots Commission.

The Sowkars (sahukars) have of late begun to oppress us. As we cannot earn enough to defray our household expenses. We are actually forced to beg of them to provide us with money, clothes and grains, which we obtain from them not without great difficult, nor without their compelling us to enter into hard conditions in the bond.

(29.1) What kind of injustice was experienced by the ryots? **2**

(29.2) Why was the harvest taken away by the moneylenders and why was it not credited to the peasants account? **2**

(29.3) Give details on the commission that investigated petition and grievances of the concerned people. **1**

SECTION F

30.(30.1) On the given political map of india , locate and label the following with appropriate symbols: (1+1+1+=3)

(a) Topra – Pillar Inscription

1

OR

Gimar – Major Rock Edicts

(b) The area where Krishnadeva Raya ruled.

1

OR

Mysore, Thanjavur.

(c) Masulipatnam a territory under British control during 1857.

1

30.(30.2) On the same given map, Mention any two centres of the revolt of 1857.

2

GENERAL INSTRUCTIONS :

- 1) The question paper consists of 34 questions
- 2) All questions are compulsory.
- 3) Question 1-20 carry 1 mark and are multiple choice questions.
- 4) Question 21-30 carry 3 marks each and should not exceed 80 -100 words each.
- 5) Question 31-34 carry 5 marks and should not exceed 150-200 words.

SECTION-A

Q1]. Harvard Step Test measures

- | | |
|----------------------|---------------------------|
| a) Muscular Strength | b) Speed |
| c) Stamina | d) Cardiovascular Fitness |

Q2] League-Cum-Knock out is part of which tournament

- | | |
|----------------|----------------|
| a) Knock out | b) Round robin |
| c) Combination | d) Consolation |

Q3]. Gomukhasana and Padmasana are performed to rectify which postural deformity?

- | | |
|----------------|--------------|
| a) Flatfoot | b) Scoliosis |
| c) Knock-knees | d) Bow legs |

Q4] AAHPER General Fitness test consists of:

- | | |
|---------------------------------|---|
| a) Pull Ups Boys | b) Sit-Ups (Flexed Leg), Boys and Girls |
| c) Shuttle Run (Boys and Girls) | d) All of these |

Q5] A person having both traits of introvert and extrovert is known as?

- | | |
|--------------|-----------------|
| a) Mesomorph | b) Extroversion |
| c) Ambiverts | d) Endomorph |

Q13] The amount of oxygen which can be absorbed and consumed by the working muscles from Blood is called _____.

- a) Oxygen intake
- b) oxygen transport
- c) oxygen uptake
- d) energy reserve

OR

Which one of these is a long term effect of exercise on cardiovascular system?

- a) ↑ Heart rate
- b) ↑ Body temperature
- c) ↑ Cardiac output
- d) ↑ BP

Q14] Acceleration runs are used to improve _____.

- a) Strength
- b) Endurance
- c) Speed
- d) Flexibility

Q15] Overstretching of ligament cause:

- a) Strain
- b) Sprain
- c) Contusion
- d) Bruises

Q16] When the angle between the two bones decreases it is termed as _____.

- a) Flexion
- b) Extension
- c) Abduction
- d) Adduction

Q17] Which of the following is not a spinal curvature deformity?

- a) Kyphosis
- b) Scoliosis
- c) Lordosis
- d) Flatfoot

Q18] Obesity is a major health threat now a days. _____ helps in controlling obesity

- (a) Ardha Matsyendrasana
- (b) Tadasana
- (c) Savasana
- (d) Makarasana

Q19] Which of the following is a macro mineral?

- a) Iodine
- b) Iron
- c) Copper
- d) Calcium

SECTION-C

Q31] Draw a knockout fixture for 23 teams.

OR

Draw a Fixture for 9 teams by Round robin method.

Q32] Discuss in detail about the AAHPERD Motor Fitness Test.

Q33] Describe five types of disorders with their symptoms and causes.

Q34] Describe the procedure for performing Gomukhasana along with its benefits and contradictors.

OR

Describe the procedure for performing Bhujangasana along with its benefits and contradictors