ENGLISH LANGUAGE
ENGLISH Paper - 1

Class: X

Pre-board Semester II Examination – February 2022

Max Marks: 40

Maximum Marks: 40

Time allowed: One and a half hours.

Answers to this Paper must be written on the paper provided separately.

You will not be allowed to write during the first 10 minutes.

This time is to be spent in reading the question paper.

The time given at the head of this Paper is the time allowed for writing the answers.

Attempt all questions.

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

Question 1 [20]

Write a composition (300 – 350 words) on *any one* of the following:

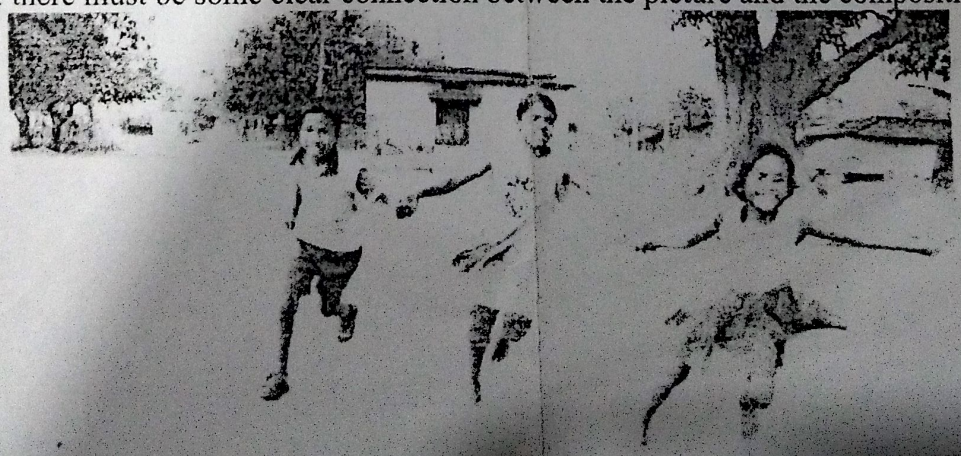
a) You have just joined your school band preparing to perform on the sports day. Write an account of how you prepared for it, the difficulties you faced and how you overcame them.

b) You are back from your boarding school after two years to live with your parents who have recently moved to a new city. Describe the changes seen both inside and outside your house and write about how you felt.

c) Write an original short story in which a man in disguise and a child are the main characters.

d) *Online or offline schooling should be a matter of choice.* Express your views either for or against this statement.

e) Study the picture given. Write a story or description or an account of what the picture suggests to you. Your composition may be directly about the subject of the picture or may take suggestions from it, but there must be some clear connection between the picture and the composition.



Question 2

[10]

Select *one* of the following:

a) Write a letter to your friend whose mother has fallen sick. Express your concern for your friend's mother. Give him/her advice on some home remedies your mother suggested to help improve her condition.

b) Write a letter to the municipal commissioner of your city requesting for permission to join the Swachh Bharat Abhiyan 2022 and paint the walls outside your school. State two reasons why you wish to join the campaign.

Question 3

a) Your school is organising a book fair to raise funds for an orphanage. Write a notice asking the pupils to donate books. [5]

b) Write an e-mail to the librarian of a neighbouring school, requesting him/her to attend the event and buys books to promote this righteous cause. [5]

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LITERATURE IN ENGLISH
ENGLISH Paper - 2

Class: X **Pre-board Semester II Examination – February 2022** **Max Marks: 40**

Maximum Marks: 40

Time allowed: One and a half hours

Answers to this Paper must be written on the paper provided separately.

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This time is to be spent in reading the question paper.

The time given at the head of this Paper is the time allowed for writing the answers.

The paper has four sections.

Section A is compulsory – All questions in Section A must be answered. You must attempt one question from each of the Sections B, C and D.

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

Section A

Question 1

Choose the correct answers to the questions from the given options (Do *not* copy the questions, write only the correct answer): **[10]**

a) What does the Duke expect of Shylock?
   i. That he will answer all questions in the court truthfully
   ii. That he will accept twice the money for his bond
   iii. That he will become friends with Antonio
   iv. That he will show mercy at the last hour

b) How would you describe the character of William from Ray Bradbury's 'All Summer in a Day'?
   i. Friendly
   ii. Bullying
   iii. Supportive
   iv. Indifferent

c) What had the athletes come from the different countries for in David Roth's poem, 'Nine Gold Medals'?
   i. To win their respective places in the race
   ii. To support each other during the race
   iii. To cheer for the race
   iv. To win the gold together

d) What does Portia expect Bassanio to keep as a token of their love and loyalty?

---

ii. A scroll
iii. A ring
iv. A seal
A handkerchief

e) Whom does Portia come disguised as, to the court ?
i. As her cousin, Bellario
ii. As the lawyer, Balthazar
iii. As herself
iv. As a messenger

f) What Olympic event did the writer of 'My Greatest Olympic Prize' 'especially' have his eye on?
i. The obstacle race
ii. The shot-put event
iii. The archery event
iv. The running broad jump

g) 'A Daniel, still say I, a second Daniel!—I thank thee, Jew, for teaching me that word.' Who says these lines and what does he mean by them?
i. Bassanio says this to Portia to praise her
ii. Gratiano says this to Shylock to praise him
iii. Gratiano says this to Portia to thank her
iv. Gratiano says this to Shylock to mock him ruthlessly

h) How would you describe the atmosphere at the beginning of David Roth's poem, 'Nine Gold Medals'?
i. Charged and excited
ii. Tired and weary
iii. Apathetic and neglectful
iv. Sympathetic and pitiful

i) Why does the writer compare his friendship with Luz Long to '24 carat gold'?
i. To show their wealth and fame
ii. To show its strength and sincerity
iii. To show off their brilliance and excellence
iv. To signify their achievements and records

j) Which planet have the children been brought to since a young age in Ray Bradbury's story, 'All Summer in a Day'?
i. Mars
ii. Jupiter
iii. Mercury
iv. Venus

Section B
Drama
(The Merchant of Venice by William Shakespeare - Acts 4 and 5)

Question 2

Read the following extract and answer the questions that follow:

But since he stands obdurate,
And that no lawful means can carry me

Out of his envy's reach, I do oppose
My patience to his fury, and am arm'd
To suffer, with a quietness of spirit,
The very tyranny and rage of his.

i. Who is the speaker? Whom does s/he describe as 'obdurate'? [2]

ii. What does 'obdurate' as used in the above lines mean? How has the speaker decided to respond to this 'obduracy'? [2]

iii. Do you agree with the speaker's response to his/ her situation? Give two reasons for your answer. [3]

iv. How does the Duke try to influence the obdurate person? Why do you think he is unsuccessful? [3]

Question 3

Read the following extract and answer the questions that follow:

Tarry a little; there is something else.
This bond doth give thee here no jot of blood;
The words expressly are 'a pound of flesh:'

i. Identify the speaker. What does s/he mean when s/he says 'tarry a little'? [2]

ii. What tactic does the speaker use to turn the tables on the listener? Why do you think the listener falls prey to it? [2]

iii. What had the listener been demanding? On which two conditions is the speaker ready to give the listener what s/he demands? [3]

iv. How would you describe the speaker based on how s/he turns the tables? What lessons do you think the speaker wants the listener to learn from this experience? [3]

Section C
Prose
(Treasure Trove – A Collection of ICSE Poems and Short Stories)

Question 4

Read the following extract and answer the questions that follow:

'It's like a penny,' she said once, eyes closed.

'No, it's not!' the children cried.

'It's like a fire,' she said, 'in the stove.'

'You're lying, you don't remember!' cried the children.

i. What does the speaker describe as a 'penny'? Why do the children not believe her? [2]

ii. Why do you think the speaker compares 'it' with 'a fire in the stove'? What figure of speech does she use in making this comparison? [2]

iii. Why do you think it is important for the children to try and remember 'it'? Why do the children not remember 'it'? What does 'it' represent for the speaker? [3]

iv. What plight does the speaker later suffer for claiming that 'it' will appear that day? What do you think causes the children to behave in this manner towards the speaker? Give two reasons. [3]

Question 5

Read the following extract and answer the questions that follow:

For the next few minutes, we talked together. I didn't tell Long what was 'eating' me, but he seemed to understand my anger, and he took pains to reassure me. Although he'd been schooled in the Nazi youth movement, he didn't believe in the Aryan supremacy business any more than I did. We laughed over the fact that he really looked the part though.

i. Who is the speaker? What was 'eating away' at him? [2]

ii. From the above extract, what could be the two reasons why the speaker is surprised that Long tries to help him? [2]

iii. What was Long's relationship with the speaker? How did Long help the speaker deal with what was 'eating away' at him? What light does this throw on Long's character? [3]

iv. What does the speaker mean when he later quotes Pierre de Coubertin to say: 'The essential thing in life is not conquering but fighting well'? Mention a moment in your life when you've found this to be true. [3]

Section D

Poetry

(Treasure Trove – A Collection of ICSE Poems and Short Stories)

Question 6

Read the following extract and answer the questions that follow:

He gave out a cry of frustration and anguish
His dreams and his efforts dashed in the dirt
But sure as I'm standing here telling the story
Now it's a strange one, but here's what occurred.

i. Who gave out a cry? Why was it full of frustration and anguish? [2]

ii. What figure of speech do you notice in the line: 'But sure as I'm standing here telling the story…'? Find one more example of this figure of speech from the above stanza. [2]

What happens after the above incident? Why does the poet call what follows 'strange'? What would you have done in case you had witnessed the above incident? Why would you do so? [3]

iv. Why does the poet say that the banner that read 'Special Olympics' couldn't have been 'nearer the mark'? What dual meaning does the poet imply? Do you agree with the poet? Give a reason for your answer. [3]

Question 7

Read the following extract and answer the questions that follow:

The vision raised its head,

And with a look made of all sweet accord,

Answered, 'The names of those who love the Lord.'

i. Who/ What is the 'vision' in the above lines? What question did 'it' 'answer'? [2]

ii. Where was the vision? What was 'it' doing when interrupted? [2]

iii. What is meant by 'all sweet accord'? Whom did the vision look at in this way? Why? [3]

iv. What does the vision reveal to the questioner at the end? Do you agree with the poet's blessing on the questioner: 'May his tribe increase'? Give a reason for your answer. [3]

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HINDI

HINDI Paper - 1

(One and a half hours)

Class: X **Pre-board Semester II Examination – February 2022** **Max Marks: 40**

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*Attempt **all** questions.*
The intended marks for the questions or parts of questions, are given in brackets.

SECTION-A (20 Marks)

Question 1.

Write a short composition in **Hindi** of approximately **200** words on any **one** of the following topics:
निम्नलिखित में से किसी एक विषय पर हिंदी में लगभग **200** शब्दों में संक्षिप्त निबंध लिखिए: **[12]**

i. पुस्तकालय व्यक्ति को अज्ञान के अंधकार से निकालकर ज्ञान के प्रकाश की ओर ले जाता है। इस कथन को ध्यान में रखते हुए पुस्तकालय के महत्व पर प्रकाश डालिए।

ii. 'पर्यावरण प्रदूषण' आज की सबसे बड़ी समस्या है। यदि समस्या का समय पर समाधान नहीं ढूँढा गया तो भावी पीढ़ी का अस्तित्व समाप्त हो सकता है। इसके लिए अपने सुझाव प्रस्तुत करते हुए एक संक्षिप्त लेख लिखिए ।

iii. जीवन में सुख-समृद्धि पाने के लिए हर व्यक्ति अपने लिए किसी व्यवसाय को चुनना चाहता है। आप अपने लिए किस व्यवसाय को चुनना पसंद करेंगे? उसकी प्राप्ति के लिए आप क्या-क्या प्रयत्न करेंगे और उससे देश व समाज को क्या लाभ होगा?

iv. दिए गए विषय पर मौलिक संक्षिप्त कहानी लिखिए--
एक कहानी जिसका अंतिम वाक्य होगा-
''..... और अब वह शांतिपूर्वक जीवन व्यतीत कर सकता था।''

v. निम्नलिखित चित्र को ध्यानपूर्वक देखिए और चित्र को आधार बनाकर वर्णन कीजिए अथवा कहानी लिखिए जिसका सीधा व स्पष्ट संबंध चित्र से होना चाहिए।

Question 2

Write a letter in **Hindi** of approximately **120** words on any **one** of the following topics: [8]

निम्नलिखित में से किसी **एक** विषय पर **हिंदी** में लगभग **120** शब्दों में पत्र लिखिए।

i. आपका छोटा भाई किसी दूसरे शहर में पढ़ने गया है, वहाँ वह खेलने के लिए समय नहीं निकाल पा रहा है। खेलों का महत्व समझाते हुए उसे पत्र लिखिए।

अथवा

ii. दिन-प्रतिदिन बढ़ते हुए जल संकट की ओर ध्यान आकर्षित करते हुए नगर-पालिका के अध्यक्ष को एक पत्र लिखिए जिसमें वर्षा के जल का संचयन (rain water harvesting) करने के लिए व्यापक स्तर पर परियोजना चलाने का सुझाव दिया गया हो ।

SECTION-B (20 Marks)

*Attempt **all** questions from this Section*

साहित्य सागर-संक्षिप्त कहानियाँ

Question 3

i. 'हाथी मरा भी तो नौ लाख का' इस कथन में आनंदी ने हाथी शब्द का प्रतीकात्मक प्रयोग किसके लिए किया है और क्यों? [2]

ii. "आज पूरा दिन राशन की दुकान पर लग गया। इतनी भीड़ थी कि लाइन खत्म होने को ही नहीं आती थी।" - यह संवाद किसने, किससे और क्यों कहा? [2]

iii. 'रंगीन प्राणी' कौन थे? उनके विषय में बूढ़े सियार ने क्या जानकारी दी? [3]

iv. दो कलाकार कहानी के आधार पर आप किसे एक सच्ची कलाकार कहेंगे? कारण सहित बताइए। [3]

साहित्य सागर-पद्य

Question 4

i. 'पाहुन ज्यों आए हों गाँव में शहर के' पंक्ति का भाव समझाइए। [2]

ii. निम्नलिखित शब्दों के अर्थ लिखिए : [2]

(A) वैरी (B) वैदेही (C) द्रवै (D) जतन

iii. सूरदास जी का परिचय लिखिए। [3]

iv. चलना हमारा काम है कविता का मूल भाव स्पष्ट कीजिए। [3]

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MATHEMATICS

Class: X

Pre-board Semester II Examination – February 2022
(One and half hours)

Max Marks: 40

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*Attempt **all** questions from **Section A** and **any three questions** from **Section B***
The intended marks for the questions or parts of questions, are given in brackets.

SECTION A

(*Attempt **all** questions from this section*)

Question 1

Choose the correct answers to the questions from the given options. **[10]**

1) The coordinates of the mid – point of the line segment joining the points (-4,5) and (8,9).

a) (1, 1)

b) (2, 7)

c) (2 ,2)

d) (1, -4)

2) The median of the data -11, 4, 9, -8 , 0 , 5 , -1 is

a) 0

b) -1

c) -2

d) 4

3) $sec\ \theta - sin\theta\ tan\theta$ is equal to

a) $cos\ \theta$

b) $sin\ \theta$

c) $tan\ \theta$

d) 1

4) The point P (-5, 4) when reflected across the origin is

a) (-5, 4)

b) (-5, -4)

c) (5,-4)

d) (5, 4)

5) A bag contains 3 red balls, 5 white balls and 7 black balls. The probability that ball drawn from the bag is neither red nor black.

a) $\frac{1}{5}$

b) $\frac{1}{3}$

c) $\frac{7}{15}$

d) $\frac{8}{15}$

6) Total surface area of a right circular cylinder with radius 3 cm and height 11 cm is

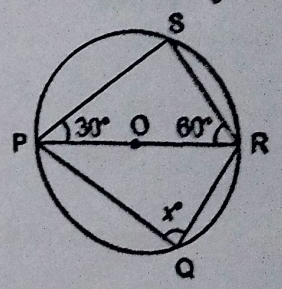
a) 284 cm^2

b) 320 cm^2

c) 324 cm^2

d) 264 cm^2

7) In the figure, O is the centre of the circle. If $\angle SPR = 30°$ and $\angle SRP = 60°$, then find $\angle PQR$.



a) 90°

b) 80°

c) 50°

d) 100°

8) The y – intercept of the line $3y = \sqrt{3}x - 7$ is

a) $\frac{1}{\sqrt{3}}$

b) $-\sqrt{3}$

c) $\frac{-7}{3}$

d) $\frac{3}{7}$

9) The mode for the following frequency distribution is

$Weight(gm)$	15	20	25	30
$No.of\ packets$	12	10	8	10

a) 8

b) 30

c) 12

d) 15

10) The diameters of two cones are equal. If their slant heights are in the ratio 5 : 4, then the ratio of their curved surface area is

a) 4 : 5

b) 5 : 4

c) 1 : 4

d) 25 : 16

SECTION B

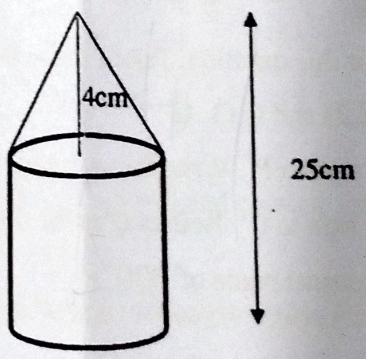
(Attempt any three questions from this Section.)

Question 2

(i) From a set of 17 cards numbered 1, 2, 3,…,17 one card is drawn at random. What is the probability that the number on the drawn card is multiple of 3 or 7? [2]

(ii) In what ratio does the $O\left(\frac{3}{5}, \frac{11}{5}\right)$ divide the line segment joining the points P (3, 5) and Q (-3, -2)? [2]

(iii) The given solid figure is a cylinder surmounted by a cone. The diameter of the base of the cylinder is 6 cm, the height of the cone is 4 cm and the total height of the cylinder is 25 cm. Find the curved surface area of the solid. [3]



(iv) Use graph paper for this question. Estimate the mode of the given distribution by plotting a histogram. [3]

Class	10 - 20	20 - 30	30 - 40	40 - 50	50 - 60	60 - 70	70 - 80
Frequency	4	8	10	12	10	4	2

Question 3

(i) Prove that : $\frac{\cos\theta}{cosec\theta+1} + \frac{\cos\theta}{cosec\theta-1} = 2\tan\theta$ [2]

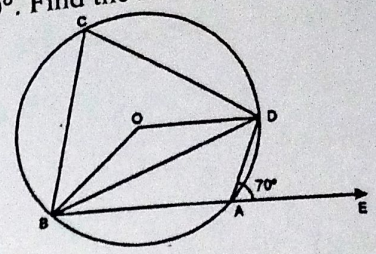
(ii) Find the equation of the line perpendicular to $2x + 3y = 6$ and with y- intercept 7 [2]

(iii) In the given figure, O is the centre of the circle. $\angle DAE = 70°$. Find the measure of [3]

a) $\angle BCD$

b) $\angle BOD$

c) $\angle OBD$



(iv) From the top of a tower 60 m high, the angles of depression of the top and the bottom of a building are observed to be 30° and 60° respectively. Find the height of the building and the distance between them. [3]

Question 4

(i) Find the mean of the following distribution [2]

Class	0 -10	10 - 20	20 - 30	30 - 40	40 - 50
Frequency	7	10	8	10	5

(ii) ABC is a triangle and G (4, 3) is the centroid of the triangle. If A = (1, 3) , B = (4, b) and C = (a, 1) , find a and b . [2]

(iii) Prove that $\frac{\sin\theta \tan\theta}{1-\cos\theta} = 1 + \sec\theta$ [3]

(iv) Use graph paper for this question. Take 1 cm = 1 unit on both the axes. [3]

(a) Plot points P (2,3) and Q (3 ,1)

(b) Reflect P in x- axis to P'. Write the coordinates of P'.

(c) Reflect Q in y- axis to Q'. Reflect Q'in the origin to Q''. Write the coordinates of Q' and Q''.

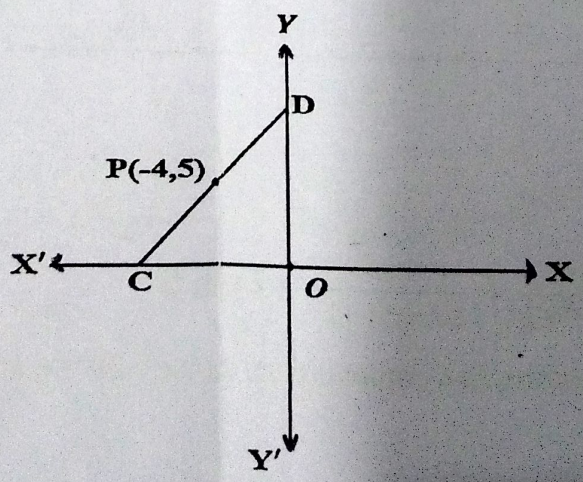
(d) Write the geometrical name of $PQQ''P'$.

Question 5

(i) If A (-2, 7) and B (-3 , 5) are two given points . Find [2]

a) gradient of AB b) the equation of AB

(ii) If P (-4 , 5)is the mid –point of CD in the given figure, find the coordinates of C and D. [2]



(iii) A hollow cylindrical pipe is 21 cm long has external diameter 10 cm. If the thickness of the pipe is 4 cm. Find the volume of copper used in making the pipe. [3]

(iv) Use graph paper for this question, take 2 cm = 10 kg along one axis and 2 cm = 5 workers along the other axis. [3]

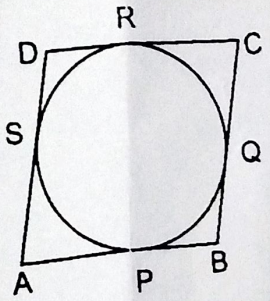
Weight (in kg)	50 - 60	60 - 70	70 - 80	80 -90	90 - 100	100 - 110	110 - 120
No. of Workers	4	7	11	14	6	5	3

Draw the ogive for the above distribution and hence estimate the median weight.

Question 6

(i) Two dice are thrown simultaneously. Find the probability that the sum of the two number appearing on the dice is lesser than or equal to 10. [2]

(ii) In the figure, a circle touches all the four sides of a quadrilateral ABCD with AB = 7 cm, BC = 7 cm, CD = 6 cm and CR = 4 cm. What is the length of AD? [2]



(iii) Find the equation of a line parallel to $2x + 5y - 9 = 0$ and passing through the mid- point of the line segment joining A (2, 7) and B (-4, 1) [3]

(iv) The angle of elevation of the top of a building under construction from a point 60 m from its base is 30°. After the construction was completed, the angle of elevation of the top became 64°. How much higher was the building raised? (Write the answer to the nearest whole number.) [3]

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BIOLOGY
(SCIENCE PAPER 3)

Class: X **Pre-board Semester II Examination - February 2022** **Max Marks: 40**

Maximum Marks: 40
Time allowed: One and a half hours
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Attempt all questions from Section A and any three questions from Section B.
The intended marks for questions or parts of questions are given in brackets [ ].

SECTION A
(Attempt all questions)

Question 1 **[10]**

Name the following by choosing the correct answers to the questions from the given options. (Do not copy the question, Write the correct answer only.)

(i) The part of brain that controls the posture of human body.
(a) Cerebellum
(b) Cerebrum
(c) Pons
(d)Thalamus

(ii) ORS is suggested to patients suffering from _____.
(a) diabetes
(b) cholera
(c) haematuria
(d) jaundice

(iii) The cells from which blood platelets are derived.
(a) Megakaryocytes
(b) Thrombocytes
(c) Hepatocyte
(d) Lymphocytes

(iv) The layer of eye which prevents the reflection of light.
(a) Retina
(b) Cornea
(c) Choroid
(d) Sclera

(v) Which of the following is NOT true for a vein?
(a) thin walled
(b) carry deoxygenated blood
(c) blood flows in spurts
(d) has valves

(vi) The neuron present in the ventral root ganglion of the spinal cord.
(a) Motor neuron
(b) Sensory neuron
(c) Association neuron
(d) Intermediate neuron

(vii) The structural and functional unit of the kidney.
(a) Nephridia
(b) Neurons
(c) Nephrons
(d) Medulla

(viii) The structure that helps to maintain the shape of the eyeball.
(a) Aqueous chamber
(b) Aqueous humour
(c) Vitreous chamber
(d) Vitreous humour

(ix) The gland which secretes both hormones and enzymes.
(a) Pituitary
(b) Pancreas
(c) Thyroid
(d) Adrenal

(x) The gland which secretes hormones calcitonin.
(a) Adrenal gland
(b) Thyroid gland
(c) Pituitary gland
(d) Pancreas

SECTION B

*(Attempt **any three** questions from this Section)*

Question 2

(i) Write two differences between Diabetes insipidus and Diabetes mellitus. [2]

(ii) State the location and function of Yellow spot. [2]

(iii) Identify the odd one in each set and name the category to which the remaining three belong. [3]

No.	Set	Odd one	Category
1	Cerebrum, cerebellum, thalamus, hypothalamus	(a) ____	(b) ____
2	Goitre, dwarfism, acromegaly, cataract	(c) ____	(d) ____
3	Sneezing, coughing, blinking, typing	(e) ____	(f) ____

(iv) Draw a neat diagram of a transverse section of an artery and label any three important parts. [3]

Question 3

(i) Justify the following statements: [2]

(a) The urine excreted out, is slightly thicker in summer than in winter.

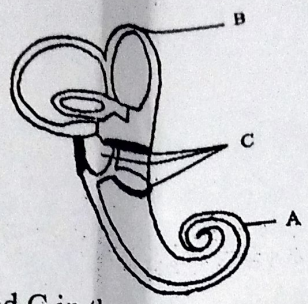
(b) One can tie shoe laces without seeing.

(ii) Give the full form of the following abbreviations: [2]

(a) ACTH

(b) FSH

(iii) Given below is the diagram of a part of the human ear. Study the same and answer the questions that follow: [3]



(a) Name the parts labelled A and C in the diagram.

(b) State the function of the part labelled 'B'.

(c)Name the audio receptor region present in the part labelled 'A'.

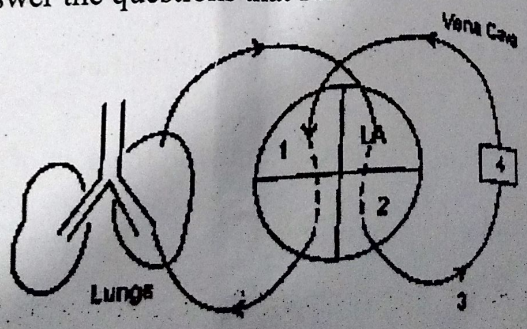
(iv) Draw the internal structure of human kidney and label four important parts. [3]

Question 4

(i) What is meant by the accommodation of the eye? Name the muscles of the eye responsible for the same. [2]

(ii) What is the location and function of cerebrospinal fluid? [2]

(iii) Given diagram is a schematic representation of the circulatory system in humans. Study the same and answer the questions that follow: [3]



(a) Label the parts 1 to 4 indicated in the diagram.

(b) What is the specific name of the type of blood circulation that takes place between the heart and the lungs?

(c) Name the valve found at the beginning of the part labelled 3.

(iv) Differentiate between cortex and medulla of a kidney. [3]

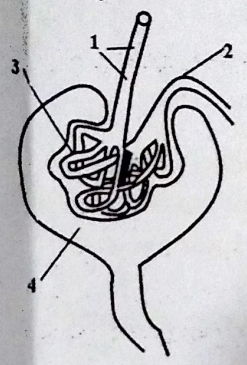
Question 5

(i) Explain: [2]
(a) Pulse
(b) Hormones

(ii) Give the biological terms for the following: [2]
(a) A thin membrane covering the front part of the eye.
(b) Protective covering located around the human brain and spinal cord.

(iii) Draw a well labelled diagram of a neuron showing the following: [3]
(a) Node of Ranvier
(b) Nissil granules
(c) Cyton

(iv) Study the diagram and answer the following: [3]



(a) Label parts 3 and 4.
(b) State the structural difference between part 1 and 2.
(c) Name the stage of urine formation that occurs in part 3.

Question 6

(i) Name the hormone required for – [2]
(a) ossification of bone
(b) increase blood supply to muscles

(ii) State the location and function of Eustachian tube. [2]

(iii) Explain the process of blood clotting with the help of flowchart. [3]

(iv) Mention the effects on the following organs by the autonomous nervous system in the table given below: [3]

Organ	Sympathetic System	Parasympathetic System
Salivary gland	(a) _____	(b) _____
Heart	(c) _____	(d) _____
Pupil of eye	(e) _____	(f) _____

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CHEMISTRY
Science Paper-2

Class: X **Pre Board Semester II Examination – February 2022** **Max Marks: 40**

Maximum Marks: 40
Time allowed: One and a half hours
Answers to this Paper must be written on the paper provided separately. You will not be allowed to write during the first 10 minutes. This time is to be spent in reading the question paper. The time given at the head of this Paper is the time allowed for writing the answers

*Attempt **all** questions from **Section A** and any **three questions** from **Section B**. The intended marks for questions or parts of questions are given in brackets [ ].*

Section A

*(Attempt **all** questions)*

Question 1

Choose the correct answers to the questions from the given options. (Do not copy the questions, write the correct answers only) [10]

(i) Which of the following salt is known as 'nitre'?
a) copper nitrate
b) potassium nitrate
c) sodium nitrate
d) potassium chloride

(ii) The drying agent used to get dry ammonia gas is
a) CaO
b) $CaCl_2$
c) conc.H_2SO_4
d) P_2O_5

(iii) The purpose of fountain experiment is to show that HCl gas is
a) denser than air.
b) highly soluble in water.
c) neutral in nature.
d) acidic in nature

(iv) The IUPAC name of acetylene is
a) ethane
b) ethene
c) propyne
d) ethyne

(v) The catalyst used for the hydrogenation of ethene is
a) nickel
b) platinum
c) palladium
d) all of the above

(vi) How is ammonia gas collected?
a) downward displacement of water
b) downward displacement of air

c) upward displacement of air
d) downward delivery

(vii) In which case, nitric oxide will be formed as one of the product?
a) reaction of conc.nitric acid with carbon
b) reaction of dilute nitric acid with copper
c) reaction of conc.nitric acid with copper
d) reaction of conc. nitric acid with sulphur

(viii) Addition reaction is the characteristic property of
a) alkanes
b) alkenes
c) alkynes
d) both b and c

(ix) Magnetite is an ore of
a) Al
b) Fe
c) Mg
d) Zn

(x) The ratio in which nitrogen and hydrogen gas is taken in the Haber's process is
a) 3 : 1
b) 2 : 3
c) 1 : 3
d) 1 : 1

SECTION B

*(Attempt **any three** questions from this Section)*

Question 2

(i) Name the compound formed when [2]
(a) excess of ammonia reacts with chlorine
(b) hydrogenation of ethyne takes place in presence of a catalyst.

(ii) State the relevant reason for the following: [2]
(a) special inverted funnel arrangement is used to prepare hydrochloric acid.
(b) dry hydrogen chloride gas does not turn blue litmus red.

(iii) Write balanced chemical equations for the following chemical reactions: [3]
(a) thermal decomposition of nitric acid.
(b) reaction of sodium chloride with conc. sulphuric acid at the temperature above 200°C.
(c) oxidation of ammonia in presence of platinum as the catalyst.

(iv) Following questions are based on the electrolytic reduction of alumina: [3]
(a) state the electrolyte used.
(b) why is anode replaced from time to time?
(c) write the reaction taking place at cathode.

Question 3

(i) Name the catalyst used in each case: [2]
(a) manufacture of ammonia
(b) conversion of sulphur dioxide to sulphur trioxide in contact process.

(ii) Differentiate between: [2]
(a) dil.sulphuric acid and dil. hydrochloric acid using barium chloride solution.
(b) dil.hydrochloric acid and dil. nitric acid using lead nitrate solution

(iii) State the observation for the following: [3]
(a) conc.sulphuric acid is added to sugar.
(b) ammonia gas reacts with hydrogen chloride gas.
(c) lead nitrate is heated.

(iv) Complete the following table: [3]

Hydrocarbon	Type of bond present	First member of homologous series
Alkanes	A	Methane
B	Double covalent bond	C

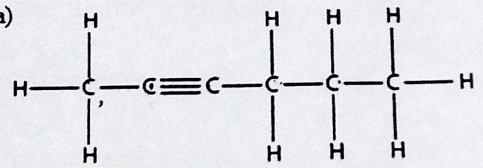
Question 4

(i) Give the composition of following alloys: [2]
(a) duralumin
(b) magnalium

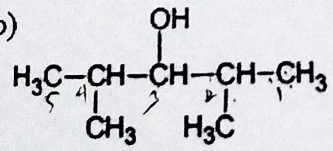
(ii) Identify the cation in the following compounds: [2]
(a) A black coloured oxide which when reacts with ammonia gets reduced to reddish brown metal producing nitrogen and water as the other products.
(b) A soluble salt which produces an acidic gas on reacting with conc. sulphuric acid. It gives golden yellow flame on burning.

(iii) Give IUPAC name of the following compounds: [3]

(a)



(b)



(c) $CH_3CH_2CH_2COOH$

(iv) State the suitable term for each of the following: [3]
(a) The property of self – linking of atoms of an element through covalent bonds in order to form straight, branched and cyclic chains.
(b) Compounds having the same molecular formula but different structural formula.
(c) The type of reaction takes place at cathode.

Question 5

(i) Name the following processes: [2]
(a) the process used for the concentration of bauxite into alumina.
(b) manufacture of ammonia.

(ii) Write a balanced chemical equation for sulphuric acid showing its: [2]
(a) non – volatile nature
(b) oxidising property

(iii) In the laboratory preparation of nitric acid why [3]
(a) the temperature is maintained below 200°C?
(b) all glass apparatus are used?
(c) is the colour of the acid obtained yellow?

(iv) Draw the structure of the following organic compounds: [3]
(a) propanoic acid
(b) butanal
(c) iso - pentane

Question 6

(i) Name the gas released when dil. HCl reacts with [2]
(a) sodium sulphite
(b) iron sulphide

(ii) Give the chemical formula of [2]
(a) oleum
(b) sodium meta aluminate

(iii) Select the correct alternative: [3]
(a) An alcohol with molecular formula $C_4H_{10}O$ is _____ (propanol/butanol)
(b) Dil HCl gives white ppt. of silver chloride with silver nitrate which is soluble in _____ (nitric acid/ammonium hydroxide)
(c) _____ (Cryolite/Coke) lowers the fusion temperature of alumina during the electrolytic reduction of alumina.

(iv) Complete and balance the following chemical equations: [3]
(a) $Conc.HNO_3 + C \rightarrow$
(b) $CH_4 + O_2 \rightarrow$
(c) $NH_4Cl + Ca(OH)_2 \rightarrow$

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PHYSICS
Science paper 2

Class: X **Pre-board Semester II Examination – February 2022** **Max Marks: 40**

Maximum Marks: 40

Time allowed: One and a half hours

Answers to this Paper must be written on the paper provided separately.

You will not be allowed to write during the first 10 minutes.

This time is to be spent in reading the question paper.

The time given at the head of this Paper is the time allowed for writing the answers.

*Attempt **all questions** from **section A** and any **three questions** from **section B***

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

SECTION A
(Answer all questions)

Question 1

1. Water from a tap is allowed to fall in a vessel with a thin neck. The pitch of sound produced by falling water---------- with the increase in the volume of water in the vessel. [1]
   a. decreases
   b. increases
   c. remains same
   d. not possible to say

2. Internal resistance of a cell increases with the: [1]
   a. Increase in the surface area of the electrode
   b. decrease in the distance between the electrode
   c. Increase in the temperature of the electrolyte
   d. Increase in the concentration of the electrolyte

3. For normal ears, the sensitivity is maximum at frequency [1]
   a. 1 kHz
   b. 1.5 kHz
   c. 2 kHz
   d. 2.5 kHz

4. In cold countries, the weather becomes moderate and pleasant, when the lakes, rivers and other water bodies start freezing because: [1]
   a. Ice has a high specific heat capacity
   b. Ice has specific latent heat of fusion
   c. Water has a high specific heat capacity of 4.2J/g°C
   d. Every one gram of water at 0°C on freezing releases 336 J of heat energy in the atmosphere.

5. A current 0.8 A is drawn from a cell of e.m.f 1.5 V, when internal resistance of the cell is 1.6Ω. The drop in potential across the terminal of the cell will be: [1]
   a. 1.24V
   b. 1.20V
   c. 1.28V
   d. 1.16V

6. When one coulomb charge flows through a conductor, the number of electrons which flow through the conductor are: [1]
   a. 6.25×10^{19} electrons
   b. 5.26×10^{16} electrons
   c. 5.26×10^{18} electrons
   d. 6.25×10^{18} electrons

7. A bulb has a resistance of 20 Ω and the p.d across its terminals is V. If the bulb is used for t seconds, then energy consumed by the bulb is: [1]
   a. $\frac{V}{20} \times t$
   b. $\frac{V^2}{20} \times t$
   c. $V \times t \times 20$
   d. $\frac{V \times t^2}{20}$

8. In a three pin plug the live pin is: [1]
   a. thinner and is towards left
   b. thicker and is towards left
   c. thinner and is towards right
   d. thicker and is towards right

9. A coil is held in a magnetic field, such that plane of the coil is at right angles to that of the plane of permanent magnet. The force experienced by the coil on the passage of electric current will be: [1]
   a. Zero
   b. Maximum
   c. Minimum
   d. Weak

10. Which of the following radiation gets deflected most in electric or magnetic field? [1]
   a. α particle
   b. β particle
   c. γ radiation
   d. X rays

SECTION B
(Answer any 3 out of 5)

Question II

1. A vibrating tuning fork is kept in contact with a table top. Answer the following questions:[3]
   a. Name the type of vibration produced.
   b. Why do we get to hear a loud sound?
   c. Draw neat and labeled diagram to represent the vibration observed by the table top when the tuning fork is removed from it.

2.
   a. State two ways of increasing the frequency of a note produced by a stringed instrument. [3]
   b. Name the characteristics which enables one to distinguish the sound of two instrument even if they are of the same pitch and same loudness.

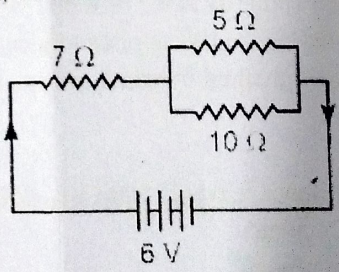
3. A vessel of mass 100g contains 150g of water at 30°C. How much ice is needed to cool it to 5°C? [S.H.C of material of vessel = 0.4 J/gK, S.L.H of ice = 336000J/kg, S.H.C of water = 4.2 J/gK] [4]

Question III

1. Of the three connecting wires in a household circuit: [3]
   a. Which of the three wires are at the same potential?
   b. In which of the three wires fuse should be connected?
   c. In which of the three wires metallic body of the device should be connected and why?

2.
   a. What is overloading in an electrical circuit? [3]
   b. An electric kettle is rated 3KW, 250V. Give reason whether this kettle can be used in a circuit which contain a fuse of current rating 13A.

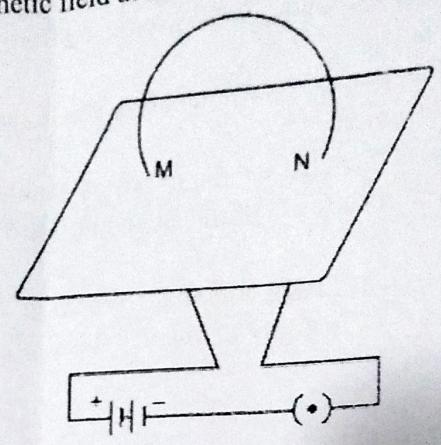
*
3. For the circuit shown in this diagram, calculate [4]



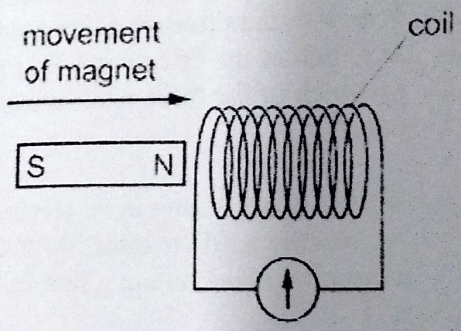
   a. the resultant resistance.
   b. the total current.
   c. the voltage across 10 Ω resistor.
   d. the current in 5 Ω resistor.

Question IV

1. The diagram alongside shows a current carrying coil passing through a sheet of cardboard at the points M & N. [3]
   a. Draw the magnetic field lines when current is passed through it.
   b. Mark the direction of current and the direction of magnetic field by arrows in your diagram.
   c. State one property of the magnetic field at the centre of the loop.



2. The diagram shows an insulated copper coil wound over a thin cardboard tube and connected to centre zero galvanometer G. [3]



   a. What is the polarity at the near end of the coil facing the magnet?
   b. State & define the rule applied to identify the polarity.
   c. Suggest one method by which we can increase the magnitude of the induced e.m.f.

3. An electrical appliance is rated 1500KVA, 250 V. This appliance is connected to mains of voltage 250V. Calculate: [4]
   a. the current drawn,
   b. resistance of the device,
   c. the electrical energy consumed in 60h,
   d. the cost of electrical energy consumed at a rate of Rs. 4.50 per unit.

Question V

1. A radioactive nucleus undergoes a series of decays according to the sequence. [3]

$$X \xrightarrow{\beta} X_1 \xrightarrow{\alpha} X_2 \xrightarrow{\alpha} {}^{172}_{69}X_3$$

What is the mass number and atomic number of X. Write the required nuclear reaction to justify?

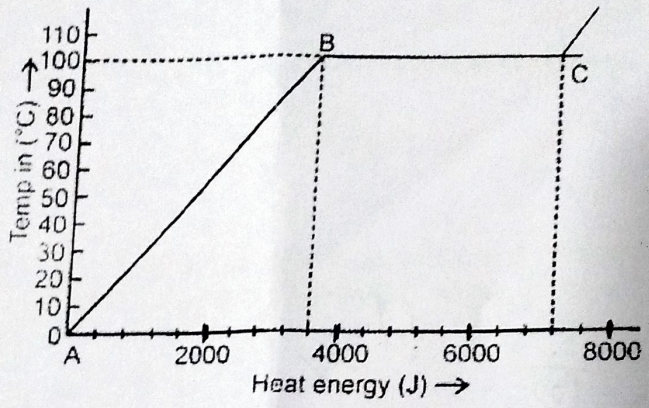
2.

a. What is meant by background radiation? [3]

b. A radioactive substance is oxidized. Will there be any change in the nature of its radioactivity? Give a reason for your answer.

c. Arrange the radioactive radiations in the descending order of their ionizing power

3. A substance initially in solid state at 0°C is heated. The graph showing the variation in temperature with the amount of heat supplied is shown in the figure given below. [4]



If the mass of the substance is 5 kg, use graph to find

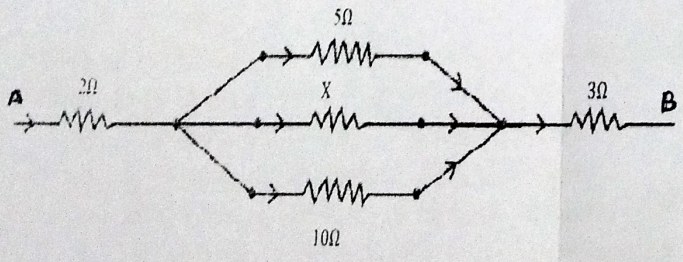
a. Specific heat capacity of the substance

b. Specific latent heat of fusion of the substance

c. State the energy change in part BC of the graph.

Question VI

1. Calculate the resistance X when the effective resistance between A and B is 8Ω. [3]



2. 40g of water at 60°C is poured into a vessel containing50g of water at 20°C. The final temperature recorded is 30°C. Calculate the thermal capacity of vessel. (S.H.C of water =4.2J/g°C) [3]

3.

a. The soldiers are asked to break their steps when marching on the suspension bridge. Explain why? [4]

b. State two properties of a high-tension wire.

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$7 \times \frac{9.3}{100}$

?231

$\frac{7 \; 2.3 \; 1}{100}$

GEOGRAPHY
H.C.G. Paper-2

Class: X **Pre-board Semester II Examination -February 2022** **Max Marks: 40**

Maximum Marks: 40

Time allowed: One and a half hours

Answers to this Paper must be written on the paper provided separately.

You will not be allowed to write during the first 10 minutes.

This time is to be spent in reading the question paper.

The time given at the head of this Paper is the time allowed for writing the answers.

*Attempt **all** questions from Section A and **any three** questions from Section B.*

The marks intended for questions are given in brackets []

SECTION A
(Attempt all questions.)

Question 1

On the outline map of India provided mark and label the following: [10]

a) Vindhyas
b) River Mahanadi
c) Kolkata
d) Nilgiris
e) Andaman Sea
f) Konkan coastal plains
g) Karakoram Pass
h) Alluvial soil region in North India
i) Standard Meridian of India
j) Mumbai High

This paper consists of 3 sides of printed matter and one outline map of India.

SECTION B

(Attempt any three questions from this part)

Question 2

(i) (a) Give any one use of iron ore. [2]

(b) State the important industrial use of copper.

(ii) With reference to Hirakud dam answer the following:

(a) On which river is it situated? [2]

(b) Name the state benefitted by Hirakud dam.

(iii) Which state is the leading producer of the following minerals?

(a) Coal

(b) Oil [3]

(c) Manganese

(iv) (a) Mention two advantages of using biogas as the source of power.

(b) India's location is advantageous for the generation of solar power. Why?

(c) Name any two states in India which have the high wind potential. [3]

Question 3

(i) (a) Mention any two problems faced by the Indian agriculture.

(b) State the remedial measures taken by the Indian Government to reduce the impact of each of the problems mentioned by you. [2]

(ii) (a) Differentiate between kharif season and rabi season.

(b) Mention any one crops each grown in these seasons. [2]

(iii) With reference to Rice cultivation answer the following.

(a) Name the soil found suitable for its growth.

(b) Name the state that is the largest producer of this crop.

(c) Why does the cultivation of rice require a lot of manual labour? [3]

(iv) (a) Name any two edible oilseeds grown in India.

(b) State the geographical conditions required for the growth of cotton in India

(c) What is ratooning? [3]

Question 4

(i) (a) Differentiate between large scale and small scale industry in India.

(b) Name a city which is most famous for electronics and hence called "The Electronics Capital of India". [2]

(ii) (a) State two major problems faced by the sugar industry in India.

(b) Name two by-products of the sugar industry. [2]

(iii) With reference to Tata Iron and Steel plant answer the following:

(a) Where is it located?

(b) From where does it get its iron ore and coal requirement? [3]

(iv) Give two reasons for each of the following:

(a) Kolkata is an important cotton manufacturing centre even though West Bengal is not a leading producer of cotton.

(b) Mini steel plants cause less pollution.

(c) Products made from petrochemicals are growing in popularity. [3]

Question 5

(i) With reference to waterways answer the following:

(a) Mention two advantages of coastal shipping.

(b) Why is inland water transport not developed in India? [2]

(ii) (a) State any two disadvantages of air transport in India.

(b) Why is there an increase of airway traffic in recent years? [2]

(iii) (a) State one economic benefit of NSEW corridor.

(b) Roadways are always considered more important than any other means of transportation. Give two reasons in support of the statement.

(c) State two disadvantages of road transport. [3]

(iv) Mention two advantages and one disadvantage of railways. [3]

Question 6

(i) Waste segregation is important. Give two reasons to support your answer. [2]

(ii) Explain briefly how as a student, you can help in the reduction of waste generation. [2]

(iii) (a) What is meant by composting?

(b) Mention any two advantages of composting. [3]

(iv) (a) Mention one initiative taken by the Government to manage waste.

(b) Why should sewage be treated before disposal? [3]

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This paper consists of 3 sides of printed matter and one outline map of India.

COMPUTER APPLICATIONS

(One and a half hours)

Class: X **Pre-board Semester II Examination – February 2022** **Max Marks: 50**

Answer to questions in this paper must be written on the space provided separately.
You will NOT be allowed to write during the first 10 minutes.
This time is to be spent in reading the questions.
The time given at the head of this paper is the time allowed for writing answers.

Attempt all questions from Section A and any four questions from
The intended marks for the questions or parts of questions, are given in brackets.

SECTION A

(Attempt all questions)

Question 1

Choose the correct answers to the questions from the given options. (Do not copy the question, Write the correct answer only.) [10]

i) A member variable declared with a public access specifier has visibility in _____.

a) class
b) package
c) sub class
d) all of these

ii) What will be the output of the following?

System.out.println (Character.isUpperCase('L'));

a) true
b) false
c) L
d) l

iii) Which element is num[9] of the array num?

a) 8th
b) 9th
c) 10th
d) 11th

iv) Corresponding wrapper class of boolean data type is _____.

a) boolean
b) Boolean
c) BOOLEAN
d) true

This paper consists of 3 printed pages.

v) The return data type of .isLetterOrDigit( )is _____.

a) int
b) char
c) boolean
d) string

vi) Consider the following statement, it is the example of _____.

Integer val = new Interger(20);

a) Autoboxing
b) Unboxing
c) Explicit type conversion
d) Implicit type conversion

vii) What will be the output of the following?

```
String s = "Today is test";
System.out.print(s.indexOf('T'));
System.out.println(s.substring(9).replace('t','r'));
```

a) 0rest
b) 0 rest
c) 0Rest
d) Rest

viii) If int x[]= {5,9,2,3,2,8}; What is the value of A and B?

1) A= x.length
2) B= x[3]+x[1]*x[2]

a) A = 6 B = 21
b) A = 5 B = 21
c) A = 6 B = 24
d) A = 5 B = 24

ix) Predict the output for the following:

```
String s1 = {"MUMBAI" , "HYDERABAD" , "LUCKNOW", "UDAIPUR", "CHENNAI"};
System.out.println(s1[2].substring(0,4));
```

a) UDA
b) UDAI
c) LUCK
d) Luck

x) A binary search _____

a) can be used with sorted arrays only.
b) can be used with unsorted arrays only.
c) can be used with both sorted and unsorted arrays.
d) cannot be used with arrays.

SECTION B

(Attempt any 4 questions.
Variable Description box is mandatory after every program)

Question 2 [10]

Write a program to input a sentence. Find and display the following:
i) Number of words present in the sentence.
ii) Number of letters present in the sentence.
Assume that the sentence has neither include any digit nor a special character.

Question 3 [10]

Write a program to accept a string. Count and display the number of vowels present in the string.
Sample input: Lodha World School
Sample output: 5

Question 4 [10]

Write a program to perform a binary search on the list of integers given below, to search for an element input by user. If it is found, display the element along with its position, otherwise display the element 'search element not found!'.
Array elements : 5,7,9,11,15,20,30,45,89,97

Question 5 [10]

Write a program to accept 10 different numbers in a single dimensional array. Display the greatest and smallest numbers of the array elements.

Question 6 [10]

Write a program to store the runs scored by 11 Indian cricket players in an innings along with names. Now display the name of the cricketer who has made the highest score in that innings along with the runs.

Question 7 [10]

Define a class to declare an integer array of size n and accept the elements into the array. Search for an element input by the user using linear search technique, display the element if it is found, otherwise display the message "NO SUCH ELEMENT.

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