Exam EXperts

A collection of

BOARD QUESTIONS

With Solutions

2019 to 2024
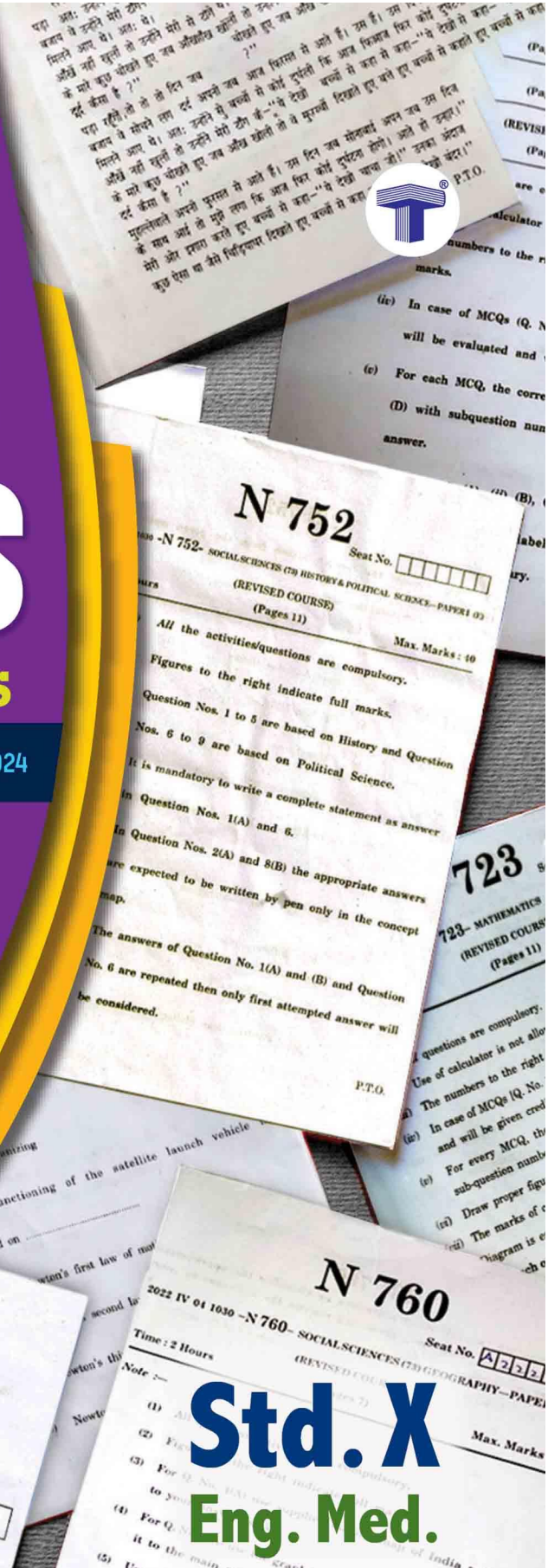
CHAPTERWISE & SECTIONWISE COMPILATION OF BOARD QUESTIONS TILL 2024

SUBJECTS:

- English Kumarbharati
- हिंदी लोकभारती
- मराठी अक्षरभारती
- Mathematics - I & II
- Science & Technology - 1 & 2
- History and Political Science
- Geography

Std. X
Eng. Med.

TarGet Publications® Pvt. Ltd.

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A collection of
Board Questions With Solutions

2019 to 2024

- **E**nglish Kumarbharati
- **H**indi Lokbharati
- **M**arathi Aksharbharati
- **M**athematics (Part I & II)
- **S**cience & Technology (Part 1 & 2)
- **Hi**story & Political Science
- **G**eography

STD. X
(English Medium)

> Section-wise & Chapter-wise compilation of relevant Board Questions with solutions from 2019 to 2024

Salient Features

- **Subjects covered**:
  - English Kumarbharati
  - Hindi Lokbharati
  - Marathi Aksharbharati
  - Mathematics (Part I & II)
  - Science & Technology (Part 1 & 2)
  - History & Political Science
  - Geography
- **Repository of Board questions:**
  - Includes questions from March 2019 to July 2024
  - Includes relevant questions from previous curriculum
- Section-wise & Chapter-wise segregation of Board Questions along with marks
- Answers and precise solutions provided to the questions as per *latest edition* of the textbook
- Latest **July 2024** Question papers and solutions provided via QR code

Printed at: **India Printing Works,** Mumbai

PREFACE

Target's 'Board Questions with Solutions: Std. X' is a compilation of all the questions (Objective questions, Theory Questions, Numericals, Map Based as well as Graph Based Questions, Grammar and Writing Skills Based Questions) that have been asked in the previous year's SSC Maharashtra Board Papers for English Kumarbharati, Hindi Lokbharati, Marathi Aksharbharati, Mathematics (Part I & II), Science & Technology (Part 1 & 2), History & Political Science and Geography. The objective of this book is to offer students quick access to past years' board questions along with their answers.

The section-wise & chapter-wise segregation of questions enable students gauge the weightage given and type of questions preferred for a chapter. The questions are further separated into different categories: Objective questions (MCQs and other types of questions carrying 1 mark), Theory questions and numericals / map based as well as graph based questions (*for relevant chapters and subjects*).

The questions are organized chronologically, starting from March 2019 up to March 2024, with the most recent exam questions listed at the end of each section. Additionally, the July 2024 question papers and solutions for all subjects are accessible via QR code. The marks allotted to each question in a section are indicated beside the question. Solutions are concise and include relevant diagrams and graphs. For difficult objective questions, detailed solutions and explanations are provided. Although these explanations are not required for marks in the exam, they are included in round brackets for clarity.

With such a systematic compendium, students will find this book, a goldmine of Board Questions to scale the crucial examination and get insight of how to write perfect answers. We are sure our **Board Questions with Solutions** will prove to be extremely instrumental in achieving exemplary scores in the Board Examinations. Constructive criticism and feedback for improving the book are always appreciated. Please write to us on: mail@targetpublications.org

Best of luck to all the aspirants!

Publisher

Edition: Third

CONTENT

Practicing model papers is the best way to self-assess your preparation for the exam Scan the adjacent QR Code to know more about our **"SSC 54 Question Papers & Activity Sheets With Solutions."**

Need more practice for Challenging Questions in Maths?
Scan the adjacent QR code to know more about our "**Mathematics Challenging Questions**" Book.

Did you know that questions relating to *"Geography Map & Graphs Practice Book"* carry 14 out of 40 marks in your exam?
Scan the adjacent QR code and get the perfect book to help you secure those 14 marks fully.

Q.1 (A) & (B) – Language Study

DO AS DIRECTED (SIMPLE LEVEL ACTIVITIES)

[March 2019]

A1. **Do as Directed (any four out of five):**

i. **Make a meaningful sentence of your own using the following phrase:** 'to look into' **(1)**

Ans: The authorities are going to look into the matter and resolve it at the earliest.

ii. **Pick out the infinitive from the following sentence:** **(1)**
I just had to do it.

Ans: to do - Infinitive

iii. **Punctuate the following sentence:** **(1)**
did you hear him he whispered

Ans: "Did you hear him?" he whispered.

iv. **Find out two hidden words of minimum four letters from:** 'endurance' **(1)**

Ans: acre, cane, card, care, cure, dare, dear, deer, earn, near, need, race, read, rude, crane, dance, under
(Any two words of minimum 4-letters will be accepted as the answer)

v. **Complete the following word chain of verbs:** **(1)**
write, e _____, _____, _____, _____

Ans: write, emit, train, need, drag

[July 2019]

vi. **Pick out the present participle from the sentence:** **(1)**
I don't like frightening stories.

Ans: frightening – Present Participle

vii. **Write the 'root word' of the given word:**
unable **(1)**

Ans: able

viii. **Choose the appropriate alternative:** **(1)**
Neeta spoke in an _____ tone.
(excited/excitedly)

Ans: excited

ix. **Fill in the blank with the proper form of the verb as per the subject:** **(1)**
Mother _____ a good meal. (cook/ cooks)

Ans: cooks

x. **Make a meaningful sentence by using the following phrase:** to get out of **(1)**

Ans: Farhaan lied in order to get out of the awkward situation

[March 2020]

xi. **Write two compound words of your own.** **(1)**

Ans: blackboard, daylight, notebook

xii. **Pick out the gerund from the following sentence:** **(1)**
This attitude of taking destroys families.

Ans: Gerund – taking

xiii. **Punctuate the following sentence:** **(1)**
after all he doesnt pay me

Ans: After all, he doesn't pay me.

xiv. **Form two present participles in which the last letter is doubled.** **(1)**

Ans: running, swimming, robbing

xv. **Complete the following word chain of verbs:** **(1)**
examine, e_____, _____, _____, _____

Ans: examine, eat, teach, hit, train

[Dec 2020]

xvi. **Make a meaningful sentence of your own using the following phrase:** 'drop out' **(1)**

Ans: Many girls drop out of school before the age of 15.

xvii. **Pick out the present participle from the following sentence:** **(1)**
His eyes were shining.

Ans: shining – Present Participle

xviii. **Fill in the blank with the proper form of the verb given in the bracket:** **(1)**
Either of the two ………………………… guilty. (is/are)

Ans: Either of the two is guilty.

xix. **Form past participle in which the last letter is doubled.** **(1)**

Ans: stop – stopped

xx. **Complete the word chain of adjectives:** **(1)**
small, l_____, _____, _____, _____

Ans: small, large, elegant, tall, loud

[March 2022]

xxi. **Punctuate the following:** (1)
you have never heard of bach he asked.
Ans: "You have never heard of Bach?" he asked.

xxii. **Find out 4 hidden words having at least four letters from the given word:** (1)
proclamation
Ans: portal, tropic, motor, polio

xxiii. **Spot the error and rewrite the correct sentence:** (1)
All the great religions teaches us to care for our children.
Ans: All the great religions teach us to care for our children.

xxiv. **Arrange the following words in the alphabetical order:** (1)
invention, indisputable, interactions, inquisitive.
Ans: indisputable, inquisitive, interactions, invention.

xxv. **Complete the word chain of verbs:** (1)
call, _____, _____, _____,
_____
Ans: call, laugh, hate, entertain, nourish

[July 2022]

xxvi. **Identify the type of sentence based on its function:** (1)
Take what you please.
Ans: Imperative sentence

xxvii. **Spot the error in the following sentence and rewrite with its correction:** (1)
He run very fast
Ans: He runs very fast.

xxviii. **Pick out the participle from the given sentence:** (1)
I don't like frightening stories.
Ans: Participle - frightening

xxix. **Use the given phrase in a meaningful sentence of your own:** (1)
to look forward.
Ans: Every year, the farmers look forward for the rainy season.

xxx. **Complete the word chain of Noun:** (1)
Strength, ……., ……., ……., …….
Ans: Strength, house, education, notebook, king

[March 2023]

xxxi. **Punctuate the following given sentence:** (1)
he will not be able to stop them
Ans: He will not be able to stop them.

xxxii. **Pick out an infinitive from the given sentence:** (1)
The sun began to sink.
Ans: to sink – infinitive

xxxiii. **Give a new blending word, after combining two words:** (1)
a. Breakfast + lunch = _____
b. Smoke + fog = _____
Ans: a. Brunch   b. Smog

xxxiv. **Fill in the blank with the proper form of the verb as per the subject:** (1)
Stephen Hawking _____ continued to write at a prolific rate. **(has/have)**
Ans: Stephen Hawking has continued to write at a prolific rate

xxxv. **Write the 'root word' after dropping the prefix or suffix relationship.** (1)
Ans: relate

[July 2023]

xxxvi. **Make a meaningful sentence of your own using the following phrase:** (1)
'by fits and starts'
Ans: If one works by fits and starts, one will never achieve much.

xxxvii. **Spot the error in the following sentence and rewrite it:** (1)
I doesn't need beautiful armour made to my measure.
Ans: I don't need beautiful amour made to my measure.

xxxviii. **Identify the type of sentence:** (1)
Give it to me quickly.
Ans: Imperative Sentence.

xxxix. **Form present participle in which the last letter is doubled.** (1)
Ans: Passing

xxxx. **Find out the hidden words from the given word (Minimum four letters each):** (1)
ORNAMENTATION
Ans: a. Rent   b. Rain
c. Iron   d. Name

[March 2024]

xxxxi. **Pick out the infinitive from the following sentence:** (1)
Every child is free to grow.
Ans: to grow – infinitive

xxxxii. **Write the collocations for the following:** (1)
ticket ……………………………
…………………….… drizzle.
Ans:
a. ticket office   b. light drizzle

xxxxiii. **Punctuate the following sentence:** (1)
dr kalam sat contemplating deeply
Ans: Dr. Kalam sat contemplating deeply.

Page no. **3** to **100** are purposely left blank. To

see complete chapter buy **Target Notes**

<div align="center">

प्र. 1. (अ) व (आ) : पठित गद्यांश

पहली इकाई

पाठ २: लक्ष्मी

</div>

प्र.1. (अ) निम्नलिखित पठित गद्यांश पढ़कर दी गई सूचनाओं के अनुसार कृतियाँ कीजिए: [मार्च 2019]

> दूसरे दिन रहमान सवेरे आठ-नौ बजे के करीब लक्ष्मी को इलाके से बाहर जहाँ नाला बहता है, जहाँ झाड़-झंखाड़ और कहीं दूब के कारण जमीन हरी नजर आती है, छोड़ आया ताकि वह घास इत्यादि खाकर अपना कुछ पेट भर ले। लेकिन माँ-बेटे को यह देखकर आश्चर्य हुआ कि लक्ष्मी एक-डेढ़ घंटे बाद ही घर के सामने खड़ी थी। उसके गले में रस्सी थी। एक व्यक्ति उसी रस्सी को हाथ में थामे कह रहा था— "यह गाय क्या आप लोगों की है?"
>
> रमजानी ने कहा, "हाँ।"
>
> "यह हमारी गाय का सब चारा खा गई है। इसे आप लोग बाँधकर रखें नहीं तो काँजी हाउस में पहुँचा देंगे।"
>
> रमजानी चुप खड़ी आगंतुक की बातें सुनती रही।
>
> दोपहर बाद जब करामत अली ड्यूटी से लौटा और नहा-धोकर कुछ नाश्ते के लिए बैठा तो रमजानी उससे बोली— "मेरी मानो तो इसे बेच दो।"
>
> "फिर बेचने की बात करती हो………? कौन खरीदेगा इस बुढ़िया को।"

1. संजाल पूर्ण कीजिए: (2)
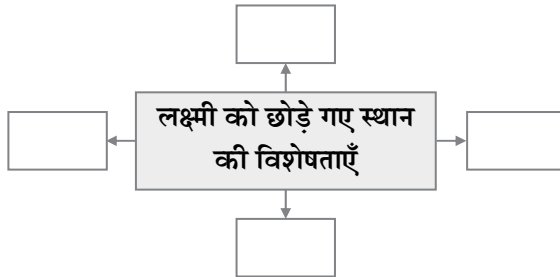
2. केवल एक/दो शब्दों में उत्तर लिखिए: (2)

i. करामत अली इस समय ड्यूटी से लौटा ....

ii. दूसरों की गाय का चारा खानेवाली ....

iii. रमजानी इसकी बातें सुनती रही ....

iv. लक्ष्मी को देखकर आश्चर्यचकित होनेवाले ....

3. i. वचन परिवर्तन कीजिए: (1)

    1. इलाके   2. रस्सी

  ii. लिंग परिवर्तन कीजिए: (1)

    1. बेटा   2. गाय

4. 'जानवरों के प्रति हमदर्दी' विषय पर अपने विचार लिखिए। (2)

उत्तर:

1.

वहाँ नाला बहता था।

इलाके से बाहर था। ← लक्ष्मी को छोड़े गए स्थान की विशेषताएँ → वहाँ झाड़-झंखाड़ था।

कहीं दूब के कारण जमीन हरी नजर आती थी।
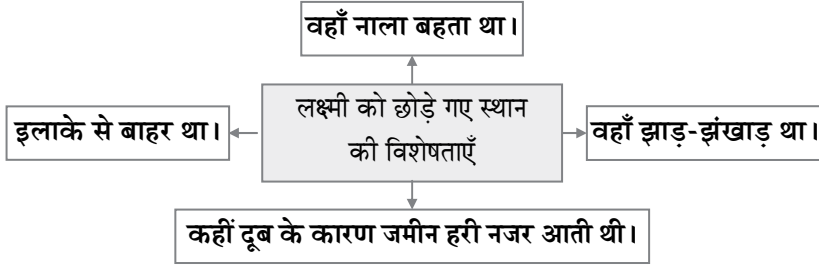
2.
i. दोपहर बाद	ii. लक्ष्मी
iii. आगंतुक	iv. माँ-बेटे

3.
i. 1. इलाका	2. रस्सियाँ
ii. 1. बेटी	2. बैल

4. मनुष्य की तरह जानवर भी इस दुनिया का एक हिस्सा हैं। आज दुनिया में बेजुबान जानवरों के साथ बहुत बुरा व्यवहार किया जा रहा है। हम यह भूल जाते हैं कि जानवर भी सुख-दुख का एहसास करते हैं। वे काफी हद तक मनुष्यों पर निर्भर हैं, खासकर पालतू जानवर। अत: प्रत्येक मनुष्य को इन बेजुबान जानवरों के प्रति मानवता की भावना बनाए रखनी चाहिए। बूढ़े जानवरों से छुटकारा पाने के लिए उन्हें खुले में नहीं छोड़ना चाहिए। खुले में घूम रहे जानवरों को सरकार द्वारा बनाए गए पशुशाला में ले जाना चाहिए, जिससे वहाँ उनकी उचित देखभाल हो सके।

प्र.1. (अ) निम्नलिखित पठित गद्यांश पढ़कर दी गई सूचनाओं के अनुसार कृतियाँ कीजिए: [दिसंबर 2020]

> दोपहर बाद जब करामत अली ड्यूटी से लौटा और नहा-धोकर कुछ नाश्ते के लिए बैठा तो रमजानी उससे बोली– "मेरी मानो तो इसे बेच दो।"
>
> "फिर बेचने की बात करती हो.......? कौन खरीदेगा इस बुढ़िया को।"
>
> "रहमान कुछ कह तो रहा था, उसे कुछ लोग खरीद लेंगे। उसने किसी से कहा भी है। शाम को वह तुमसे मिलने भी आएगा।"
>
> करामत अली सुनकर खामोश रह गया। उसे लग रहा था, सब कुछ उसकी इच्छा के विरुद्ध जा रहा है, शायद जिस पर उसका कोई वश नहीं था।
>
> करामत अली यह अनुभव करते हुए कि लक्ष्मी की चिंता अब किसी को नहीं है, खामोश रहा। उठा और घर में जो सूखा चारा पड़ा था, उसके सामने डाल दिया।
>
> लक्ष्मी ने चारे को सूँघा और फिर उसकी तरफ निराशापूर्ण आँखों से देखने लगी। जैसे कहना चाहती हो, मालिक यह क्या? आज क्या मेरे फाँकने को यह सूखा चारा ही है। दर्रा-खली कुछ नहीं।
>
> करामत अली उसके पास से उठकर मुँह-हाथ धोने के लिए गली के नुक्कड़ पर नल की ओर चला गया।

1. संजाल पूर्ण कीजिए: (2)

गद्यांश में उल्लेखित नाम
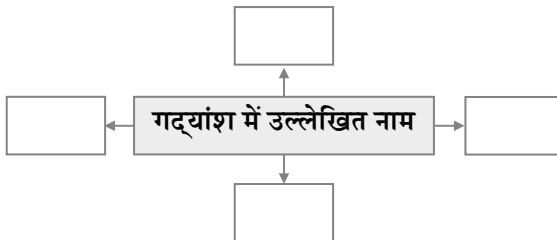
2. प्रतिक्रियाएँ लिखिए: (2)

i. लोगों द्वारा लक्ष्मी को खरीदने की बात सुनने पर करामत अली की – ....

ii. करामत अली द्वारा लक्ष्मी को सूखा चारा देने पर लक्ष्मी की – ....

Page no. **101** to **213** are purposely left blank.

To see complete chapter buy **Target Notes**

<div align="center">**प्र. 1. (अ) व (आ) : पठित गद्य उतारे**</div>

<div align="center">**पाठ 3: शाल**</div>

प्र.1. (आ) उतारा वाचून सूचनेनुसार कृती करा: **[मार्च 2019]**

1. वैशिष्ट्ये लिहा: **(2)**

i. कृष्णा नदीचा प्रवाह – _____.

ii. टोपलीत ठेवलेले मूल – _____.

iii. लेखकाने सुटकेसमधून काढलेली शाल – _____.

iv. कविवर्य नारायण सुर्वे यांचे कार्यक्रम – _____.

> पुढे वाईला विश्वकोशाचा अध्यक्ष म्हणून मी गेलो. तिथे नदीकाठच्या प्राज्ञ पाठशाळेच्या खोलीत मी राहत असे. खोलीच्या दक्षिणेकडील खिडक्या कृष्णा नदीच्या चिंचोळ्या प्रवाहावर होत्या. थंडीच्या दिवसात एक बाई माझ्या खिडकीखालील घाटाच्या छोट्या तटावर तिचे छोटे मूल एका टोपलीत ठेवून मासे पकडण्याच्या उद्योगात होती. तिचे बाळ कडाक्याच्या थंडीने कुडकुडत रडत होते; पण आई तिकडे बघतही नव्हती. मला मात्र राहवले नाही. मी सुटकेसमधील 'पुलकित' शाल काढली, पाचपन्नास रुपयांच्या नोटा काढल्या व त्या बाईला हाक मारली. खिडकीतून ते सर्व खाली दिले आणि म्हटले, "त्या बाळाला आधी शालीत गुंडाळ आणि मग मासे मारत बैस." या घटनेची ऊब पुलकित शालीच्या उबेपेक्षा अधिक होती.
>
> कविवर्य नारायण सुर्वे खूप सभा, संमेलने गाजवत. पुढे ते साहित्य संमेलनाचे अध्यक्षही झाले. परिणामतः त्यांच्या कार्यक्रमांना अहोरात्र भरतीच असे. प्रत्येक कार्यक्रमात सन्मानाची शाल व श्रीफळ त्यांना मिळत राही. एकदा ते मला म्हणाले, "या शाली घेऊन घेऊन मी आता 'शालीन' बनू लागलो आहे."

2. प्रत्येकी एका वाक्यात उत्तरे लिहा: **(2)**

i. सन्मानाची प्रतीके लिहा.

ii. पाचपन्नास रुपयांच्या नोटा लेखकाने मासे पकडणाऱ्या बाईला का दिल्या असाव्यात?

3. स्वमत: **(2)**

लेखक – रा.ग. जाधव यांची संवेदनशीलता जाणवणारे कोणतेही एक उदाहरण पाठाच्या आधारे स्पष्ट करा.

[टीप: अद्ययावत कृतिपत्रिका आराखड्यानुसार सदर प्रश्न 3 गुणांकरता विचारला जातो.**]**

उत्तरे:

1. i. कृष्णा नदीचा प्रवाह – **चिंचोळा.**

ii. टोपलीत ठेवलेले मूल – **छोटे, थंडीने कुडकुडून रडणारे.**

iii. लेखकाने सुटकेसमधून काढलेली शाल – **पुलकित.**

iv. कविवर्य नारायण सुर्वे यांचे कार्यक्रम – **अहोरात्र भरती असणारे सन्मानाची शाल व श्रीफळ मिळवून देणारे.**

2. i. शाल व श्रीफळ ही सन्मानाची प्रतीके आहेत.

ii. त्या बाईकडे बाळाचे थंडीपासून संरक्षण करण्यासाठी पुरेसे कपडे नव्हते व त्याच्याकडे लक्ष द्यायला फुरसतही नव्हती, म्हणून त्या बाईला मदत करण्यासाठी लेखकाने तिला पाचपन्नास रुपयांच्या नोटा दिल्या असाव्यात.

3. विश्वकोशाचे अध्यक्ष म्हणून वाईला राहत असताना एकदा लेखक रा. ग. जाधव यांना कृष्णा नदीवर मासे पकडणारी एक बाई दिसली. कडाक्याच्या थंडीत तिने तिचे मूल तटावर एका टोपलीत ठेवले होते. थंडीने कुडकुडून रडणाऱ्या मुलाकडे लक्ष देणेही तिला शक्य नव्हते. लेखकाचे मन या प्रसंगाने भरून आले. त्यांनी तिला पाचपन्नास रुपये व आपल्याकडील शाल दिली व त्या बाळाला शालीत गुंडाळायला सांगितले. खरे तर ती शाल लेखकाला पु. ल. देशपांडे व सुनीताबाई यांनी दिली होती. त्यामुळे, त्यांच्यासाठी ती गौरवाची, मानाची शाल होती. पु.लं. ची आठवण म्हणून कौतुकाने ती त्यांना स्वत:जवळ ठेवावीशी वाटणे साहजिक होते; पण लेखकाने मात्र स्वत:च्या गौरवाला महत्त्व न देता माणुसकीला महत्त्व दिले. एका अनोळखी बाळाची काळजी त्यांना अस्वस्थ करून गेली. यातूनच त्यांची संवेदनशीलता जाणवते.

प्र.1. (अ) उताऱ्याच्या आधारे सूचनेनुसार कृती कराः [मार्च 2022]

1. चौकटी पूर्ण कराः (2)

i. उताऱ्यात आलेले नदीचे नाव – ☐☐

ii. बाळाची आई करत असलेला उद्योग – ☐☐

> पुढे वाईला विश्वकोशाचा अध्यक्ष म्हणून मी गेलो. तिथे नदीकाठच्या प्राज्ञ पाठशाळेच्या खोलीत मी राहत असे. खोलीच्या दक्षिणेकडील खिडक्या कृष्णा नदीच्या चिंचोळ्या प्रवाहावर होत्या. थंडीच्या दिवसात एक बाई माझ्या खिडकीखालील घाटाच्या छोट्या तटावर तिचे छोटे मूल एका टोपलीत ठेवून मासे पकडण्याच्या उद्योगात होती. तिचे बाळ कडाक्याच्या थंडीने कुडकुडत रडत होते; पण आई तिकडे बघतही नव्हती. मला मात्र राहवले नाही. मी सुटकेसमधील 'पुलकित' शाल काढली, पाचपन्नास रुपयांच्या नोटा काढल्या व त्या बाईला हाक मारली. खिडकीतून ते सर्व खाली दिले आणि म्हटले, "त्या बाळाला आधी शालीत गुंडाळ आणि मग मासे मारत बैस." या घटनेची ऊब पुलकित शालीच्या उबेपेक्षा अधिक होती.
>
> कविवर्य नारायण सुर्वे खूप सभा, संमेलने गाजवत. पुढे ते साहित्य संमेलनाचे अध्यक्षही झाले. परिणामतः त्यांच्या कार्यक्रमांना अहोरात्र भरतीच असे. प्रत्येक कार्यक्रमात सन्मानाची शाल व श्रीफळ त्यांना मिळत राही. एकदा ते मला म्हणाले, "या शाली घेऊन मी आता 'शालीन' बनू लागलो आहे."

2. आकृतिबंध पूर्ण कराः (2)

☐ ← **कार्यक्रमात नारायण सुर्वे यांना सन्मानाने मिळणाऱ्या वस्तू** → ☐
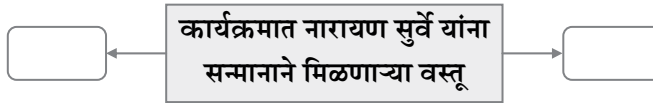
3. स्वमतः (3)

'शाल व शालीनता' यांचा पाठाच्या आधारे तुम्हांला कळलेला अर्थ स्पष्ट कराः

उत्तरेः

1. i. उताऱ्यात आलेले नदीचे नाव – **कृष्णा**

   ii. बाळाची आई करत असलेला उद्योग – **मासेमारी**

2. **शाल** ← **कार्यक्रमात नारायण सुर्वे यांना सन्मानाने मिळणाऱ्या वस्तू** → **श्रीफळ**
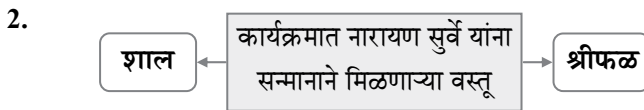
3. शालीनता हा एक स्वभावगुण आहे, जो मुळातच व्यक्तीमध्ये असावा लागतो, तर शाल हे सन्मानाचे प्रतीक मानले जाते. व्यक्तीचा गौरव करण्याकरिता श्रीफळ व शाल दिली जाते; मात्र या सन्मानाच्या रूपाने व्यक्तीला मिळालेली शाल व शालीनता यांचा संबंध असेलच असे नाही. कवी नारायण सुर्वेही हीच बाब सांगतात. शाल मिळालेली प्रत्येक व्यक्ती शालीन असेल किंवा शाल न मिळालेली प्रत्येक व्यक्ती शालीन नसेल असे होत नाही. शाल पांघरून मनाची, आचरणातील शालीनता मिळवता येत नाही. त्याचप्रमाणे मुळातच शालीन असणारी व्यक्ती शाल रूपाने सन्मान मिळवतेच असेही नाही; मात्र ती व्यक्ती आपल्यातील शालीनता जपून ठेवते. त्यामुळे, 'शाल आणि शालीनता' यांचा विशेष संबंध असेलच असे नाही.

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To see complete chapter buy **Target Notes**

1 Linear Equations in Two Variables

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1. For simultaneous equations in variables x and y, if $D_x = 49$, $D_y = -63$, $D = 7$, then what is the value of x? **[Mar 2020]**
   (A) 7 (B) -7 (C) $\dfrac{1}{7}$ (D) $\dfrac{-1}{7}$

2. For simultaneous equations in variables x and y, $D_x = 49$, $D_y = -63$, $D = 7$, then what is the value of y? **[Mar 2022]**
   (A) 9 (B) 7 (C) -7 (D) -9

3. Find the value of the determinant $\begin{vmatrix} 5 & 3 \\ -7 & -4 \end{vmatrix}$. **[July 2019, 2022]**
   (A) -1 (B) -41
   (C) 41 (D) 1

4. To draw graph of $4x + 5y = 19$, what will be the value of y when $x = 1$: **[Nov 2020; Mar 2023]**
   (A) 4 (B) 3 (C) 2 (D) -3

5. Find the value of determinant $\begin{vmatrix} 3 & 2 \\ 4 & 5 \end{vmatrix}$: **[July 2023]**
   (A) 2 (B) 7 (C) -7 (D) 23

6. To draw the graph of $x + 2y = 4$, find x when $y = 1$: **[Mar 2024]**
   (A) 1 (B) 2 (C) -2 (D) 6

Answers

1. (A) 2. (D) 3. (D) 4. (B)
5. (B) 6. (B)

Hints:

1. $x = \dfrac{D_x}{D} = \dfrac{49}{7} = 7$

2. $y = \dfrac{D_y}{D} = \dfrac{-63}{7} = -9$

3. $\begin{vmatrix} 5 & 3 \\ -7 & -4 \end{vmatrix} = 5 \times (-4) - 3 \times (-7)$
   $= -20 + 21 = 1$

4. *Refer Q.1 (B) Q.2*

5. $\begin{vmatrix} 3 & 2 \\ 4 & 5 \end{vmatrix} = (3 \times 5) - (4 \times 2)$
   $= 15 - 8$
   $\therefore \begin{vmatrix} 3 & 2 \\ 4 & 5 \end{vmatrix} = 7$

6. Putting $y = 1$ in $x + 2y = 4$, we get
   $x + 2(1) = 4$
   $\therefore \quad x + 2 = 4$
   $\therefore \quad x = 2$

1. **For simultaneous equations in variables x and y, if $D_x = 25$, $D_y = 40$, $D = 5$, then what is the value of x? [Nov 2020]**
   Solution:
   Using Cramer's rule, we get
   $x = \dfrac{D_x}{D} = \dfrac{25}{5} = \mathbf{5}$

2. **To draw a graph of $4x + 5y = 19$, find y when $x = 1$. [Mar 2022]**
   Solution:
   Substituting $x = 1$ in $4x + 5y = 19$, we get
   $4(1) + 5y = 19$
   $\therefore \quad 5y = 19 - 4 = 15$
   $\therefore \quad y = \dfrac{15}{5} = \mathbf{3}$

3. **The sum of father's age and twice the age of his son is 70. Use the given information to form a linear equation in two variables. [July 2022]**
   Solution:
   Let the present ages of father and son be x years and y years respectively.
   According to the given condition, the sum of father's age and twice the age of his son is 70.
   $\therefore \quad \mathbf{x + 2y = 70}$

4. **Find the value of the following determinant:**
   $\begin{vmatrix} 4 & 3 \\ 2 & 7 \end{vmatrix}$ **[Mar 2023]**
   Solution:
   $\begin{vmatrix} 4 & 3 \\ 2 & 7 \end{vmatrix} = (4 \times 7) - (3 \times 2) = 28 - 6$
   $\therefore \quad \begin{vmatrix} 4 & 3 \\ 2 & 7 \end{vmatrix} = \mathbf{22}$

5. **If $15x + 17y = 21$ and $17x + 15y = 11$, then find the value of $x + y$. [Mar 2020; July 2023]**
   Solution:
   $\begin{array}{r} 15x + 17y = 21 \\ +\ 17x + 15y = 11 \\ \hline 32x + 32y = 32 \end{array}$
   $\therefore \quad \mathbf{x + y = 1}$ ...[Dividing both sides by 32]

6. If $17x + 15y = 11$ and $15x + 17y = 21$, then find the value of $x - y$. [Mar 2024]

Solution:

$17x + 15y = 11$
$15x + 17y = 21$
$\underline{-\quad -\quad\quad -}$
$2x - 2y = -10$

$\therefore$ $x - y = -5$ …[Dividing both sides by 2]

Q.2 (A)	2 Marks Questions

1. Complete the following table to draw the graph of $2x - 6y = 3$: [Mar 2020]

x	-5	
y		0
(x, y)		

Ans:

x	-5	$\dfrac{3}{2}$
y	$\dfrac{-13}{6}$	0
(x, y)	$\left(-5, \dfrac{-13}{6}\right)$	$\left(\dfrac{3}{2}, 0\right)$

2. **Activity:** [Nov 2020]

$\begin{vmatrix} 3 & 2 \\ 4 & 5 \end{vmatrix} = 3 \times \boxed{} - \boxed{} \times 4$

$= \boxed{} - 8$

$= \boxed{}$

Solution:

$\begin{vmatrix} 3 & 2 \\ 4 & 5 \end{vmatrix} = 3 \times \boxed{5} - \boxed{2} \times 4 = \boxed{15} - 8 = \boxed{7}$

3. Complete the activity to find the value of the determinant. [Mar 2022]

Activity:

$\begin{vmatrix} 2\sqrt{3} & 9 \\ 2 & 3\sqrt{3} \end{vmatrix} = 2\sqrt{3} \times \boxed{} - 9 \times \boxed{}$

$= \boxed{} - 18$

$= \boxed{}$

Solution:

$\begin{vmatrix} 2\sqrt{3} & 9 \\ 2 & 3\sqrt{3} \end{vmatrix} = 2\sqrt{3} \times \boxed{3\sqrt{3}} - 9 \times \boxed{2}$

$= \boxed{18} - 18$

$= \boxed{0}$

4. Complete the following activity to find the value of x. [July 2022]

Activity:

$3x - y = 2$
$2x + y = 8$
$\overline{}$

$\boxed{} x = \boxed{}$

$\therefore$ $x = \dfrac{\boxed{}}{5}$

$\therefore$ $x = \boxed{}$

Solution:

$3x - y = 2$
$2x + y = 8$
$\overline{}$

$\boxed{5}\, x = \boxed{10}$

$\therefore$ $x = \dfrac{\boxed{10}}{5}$

$\therefore$ $x = \boxed{2}$

5. Complete the following activity; find the value of x: [Mar 2023]

$5x + 3y = 9$ …(i)
$2x - 3y = 12$ …(ii)

Add equations (i) and (ii)

$5x + 3y = 9$
$\underline{+\, 2x - 3y = 12}$

$7x = \boxed{}$

$x = \dfrac{\boxed{}}{\boxed{}}$

$x = \boxed{}$

Solution:

$5x + 3y = 9$ …(i)
$2x - 3y = 12$ …(ii)

Add equations (i) and (ii)

$5x + 3y = 9$
$\underline{+\, 2x - 3y = 12}$

$7x = \boxed{21}$

$x = \dfrac{\boxed{21}}{\boxed{7}}$

$x = \boxed{3}$

6. Complete the following table to draw the graph of the equation $x + y = 3$: [July 2023]

x	3		
y		5	3
(x, y)	$(3, 0)$		$(0, 3)$

Page no. **309** to **363** are purposely left blank.

To see complete chapter buy **Target Notes**

Q.1 (A) — 1 Mark Questions

1. ΔABC and ΔDEF are equilateral triangles, A(ΔABC) : A(ΔDEF) = 1 : 2. If AB = 4, then what is length of DE? **[Mar 2019]**
   (A) $2\sqrt{2}$ (B) 4
   (C) 8   (D) $4\sqrt{2}$

2. If Δ ABC ~ Δ PQR and 4A (Δ ABC) = 25 A(Δ PQR), then AB : PQ = ? **[July 2019]**
   (A) 4 : 25   (B) 2 : 5
   (C) 5 : 2   (D) 25 : 4

3. ΔABC ~ ΔPQR and ∠A = 45°, ∠Q = 87°, then ∠C = _____. **[Nov 2020]**
   (A) 45°   (B) 87°
   (C) 48°   (D) 90°

4. If ΔABC ~ ΔDEF and ∠A = 48°, then ∠D = _____. **[Mar 2022]**
   (A) 48°   (B) 83°
   (C) 49°   (D) 132°

5. ΔPQR ~ ΔSTU and A(ΔPQR) : A(ΔSTU) = 64 : 81, then what is the ratio of corresponding sides? **[July 2022]**
   (A) 8 : 9   (B) 64 : 81
   (C) 9 : 8   (D) 16 : 27

Answers

1. (D)   2. (C)   3. (C)   4. (A)
5. (A)

Hints:

1. In ΔABC and ΔDEF,
   $\left.\begin{array}{c}∠A ≅ ∠D \\ ∠B ≅ ∠E\end{array}\right\}$ …[Each angle is of measure 60°]
   ∴ ΔABC ~ ΔDEF   …[AA test of similarity]
   ∴ $\dfrac{A(ΔABC)}{A(ΔDEF)} = \dfrac{AB^2}{DE^2}$
   …[Theorem of areas of similar triangles]
   ∴ $\dfrac{1}{2} = \dfrac{4^2}{DE^2}$
   ∴ $DE^2 = 4^2 × 2$
   ∴ $DE = 4\sqrt{2}$ units
   …[Taking square root of both sides]

2. 4A (Δ ABC) = 25 A(Δ PQR)
   ∴ $\dfrac{A(ΔABC)}{A(ΔPQR)} = \dfrac{25}{4}$
   ΔABC ~ ΔPQR

∴ $\dfrac{A(ΔABC)}{A(ΔPQR)} = \dfrac{AB^2}{PQ^2}$
   …[Theorem of areas of similar triangles]
∴ $\dfrac{25}{4} = \dfrac{AB^2}{PQ^2}$
∴ $\dfrac{AB}{PQ} = \dfrac{5}{2}$ …[Taking square root of both sides]

3. ΔABC ~ ΔPQR
∴ ∠A ≅ ∠P, ∠B ≅ ∠Q and ∠C ≅ ∠R
   …[Corresponding angles of similar triangles]
   In ΔABC, ∠A + ∠B + ∠C = 180°
∴ 45° + 87° + ∠C = 180°
∴ ∠C = 48°

4. ΔABC ~ ΔDEF ⇒ m∠A = m∠D
   ⇒ m∠D = 48°

5. $\dfrac{A(ΔPQR)}{A(ΔSTU)} = \dfrac{PQ^2}{ST^2}$
   …[Theorem of areas of similar triangles]
∴ $\dfrac{PQ^2}{ST^2} = \dfrac{64}{81}$
∴ $\dfrac{PQ^2}{ST^2} = \dfrac{8^2}{9^2}$
∴ PQ : ST = 8 : 9

Q.1 (B) — 1 Mark Questions

1. **The ratio of corresponding sides of similar triangles is 3 : 5, then find the ratio of their areas.** **[Mar 2020]**
   Solution:
   Let the corresponding sides of similar triangles be s_1 and s_2.
   Let A_1 and A_2 be their corresponding areas.
   $s_1 : s_2 = 3 : 5$ …[Given]
   ∴ $\dfrac{s_1}{s_2} = \dfrac{3}{5}$ …(i)
   $\dfrac{A_1}{A_2} = \dfrac{s_1^2}{s_2^2}$
   …[Theorem of areas of similar triangles]
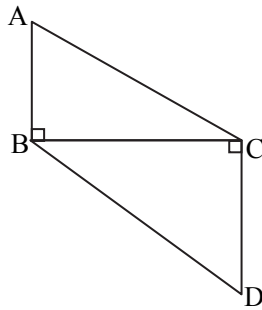 $= \left(\dfrac{s_1}{s_2}\right)^2$
   $= \left(\dfrac{3}{5}\right)^2$ …[From (i)]
   $= \dfrac{9}{25}$
   ∴ **Ratio of areas of similar triangles = 9 : 25**

2. In the given figure, seg AB ⊥ seg BC and seg DC ⊥ seg BC.
If AB = 3 cm and CD = 4 cm, then find $\dfrac{A(\Delta ABC)}{A(\Delta DCB)}$.

[Nov 2020]

Solution:

ΔABC and ΔDCB have same base BC.

∴ $\dfrac{A(\Delta ABC)}{A(\Delta DCB)} = \dfrac{AB}{CD}$ …[Triangles having equal base]

∴ $\dfrac{A(\Delta ABC)}{A(\Delta DCB)} = \dfrac{3}{4}$

3. In the given figure, seg CB ⊥ seg AB, seg AD ⊥ seg AB. If BC = 4, AD = 8, then find $\dfrac{A(\Delta ABC)}{A(\Delta ADB)}$.
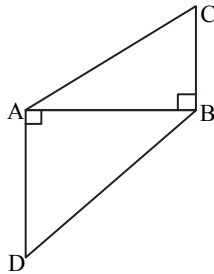
[July 2022]

Solution:

ΔABC and ΔADB have same base AB.

∴ $\dfrac{A(\Delta ABC)}{A(\Delta ADB)} = \dfrac{BC}{AD}$

…[Triangles having equal base]

$= \dfrac{4}{8}$

∴ $\dfrac{A(\Delta ABC)}{A(\Delta ADB)} = \dfrac{1}{2}$

4. If ΔABC ~ ΔPQR and $\dfrac{A(\Delta ABC)}{A(\Delta PQR)} = \dfrac{16}{25}$, then find AB : PQ. [Mar 2023]

Solution:

$\dfrac{A(\Delta ABC)}{A(\Delta PQR)} = \dfrac{16}{25}$ …(i)[Given]

$\dfrac{A(\Delta ABC)}{A(\Delta PQR)} = \dfrac{AB^2}{PQ^2}$

…(ii)[Theorem of areas of similar triangles]

∴ $\dfrac{AB^2}{PQ^2} = \dfrac{16}{25}$ …[From (i) and (ii)]

∴ $\dfrac{AB}{PQ} = \dfrac{4}{5}$

5. In the following figure, ∠ABC = ∠DCB = 90°, AB = 6, DC = 8, then $\dfrac{A(\Delta ABC)}{A(\Delta DCB)} = ?$
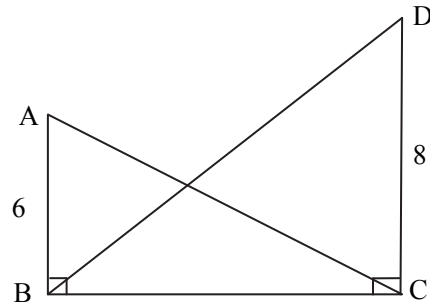
[July 2023]

Solution:

ΔABC and ΔDCB have same base BC.

∴ $\dfrac{A(\Delta ABC)}{A(\Delta DCB)} = \dfrac{AB}{DC}$ …[Triangles having equal base]

$= \dfrac{6}{8}$

∴ $\dfrac{A(\Delta ABC)}{A(\Delta DCB)} = \dfrac{3}{4}$

6. If ΔABC ~ ΔPQR and AB : PQ = 2 : 3, then find the value of $\dfrac{A(\Delta ABC)}{A(\Delta PQR)}$. [Mar 2024]

Solution:

$\dfrac{A(\Delta ABC)}{A(\Delta PQR)} = \dfrac{AB^2}{PQ^2} = \left(\dfrac{2}{3}\right)^2 = \dfrac{4}{9}$

…[Theorem of areas of similar triangles]

Q.2 (A)	2 Marks Questions

1. In ΔABC, ray BD bisects ∠ABC.
If A–D–C, A–E–B and seg ED ∥ side BC, then prove that: $\dfrac{AB}{BC} = \dfrac{AE}{EB}$. [Mar 2019]
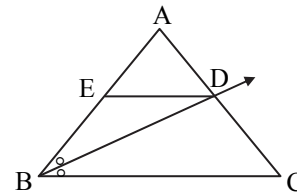
Proof:

In ΔABC, ray BD bisects ∠ABC.

∴ $\dfrac{AB}{BC} = \dfrac{\boxed{}}{\boxed{}}$ …(i)[By angle bisector theorem]

In ΔABC, seg DE ∥ side BC

∴ $\dfrac{AE}{EB} = \dfrac{AD}{DC}$ …(ii)$\left[\boxed{}\right]$

$\dfrac{AB}{\boxed{}} = \dfrac{\boxed{}}{EB}$ …[From (i) and (ii)]

Page no. **366** to **426** are purposely left blank.

To see complete chapter buy **Target Notes**

1 Gravitation

Objective Questions *[1 Mark each]*

1. Choose the *correct* Alternative:

i. The minimum velocity of the spacecraft to escape from earth's gravitational force must be _____. **[Dec 2020]**

(A) 112 km/s   (B) 11.2 km/s

(C) 1.12 km/s   (D) 0.112 km/s

Ans: (B)

2. Answer the following:

i. Write proper answer in the box:

If $F = \dfrac{Gm_1m_2}{d^2}$ then F = [   ]
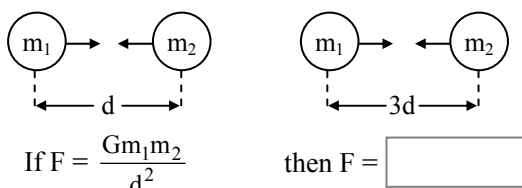
[Mar 2019]

Ans: $\dfrac{Gm_1m_2}{9d^2}$

Theory Questions

1. Explain why value of g changes if we go inside the earth. **[July 2019]** *[2 Marks]*

Ans:

i. The acceleration due to gravity (g) on earth's surface is given as, $g = \dfrac{GM}{R^2}$

The value of g depends on the mass M of the earth and the radius R of the earth.

ii. As we go inside the earth, our distance from the centre of the earth decreases and no longer remains equal to the radius of the earth (R).

iii. Along-with the distance, the part of the earth which contributes towards the gravitational force felt also decreases, decreasing the value of (M).

iv. Due to combined result of change in R and M, value of g decreases as we go inside the earth and becomes zero at the centre of the earth.

2. Give scientific reasons:

The weight of an object changes from place to place though its mass is constant.

[Mar 2020] *[2 Marks]*

Ans:

i. Mass is a fundamental quantity whose value remains same everywhere. Hence, the mass of an object is same everywhere in the universe.

ii. Weight of an object is product of mass and gravitational acceleration, i.e., W = F = mg

iii. As the weight depends on the value of acceleration due to gravity (g). Since value of g changes from place-to-place, the weight of the object is different at different places.

3. Will the value of g be the same everywhere on the surface of the earth? Justify your answer.

[July 2022] *[2 Marks]*

Ans:

i. The value of g will not be the same everywhere on the surface of the earth.

ii. The shape of the earth is not exactly spherical and hence the distance of a point on the surface of the earth from its centre differs somewhat from place to place.

iii. Due to its rotation, the earth bulges at the equator and is flatter at the poles. Its radius is largest at the equator and smallest at the poles.

iv. Hence, the value of 'g' is the highest at the poles (9.832 m/s^2) and decreases slowly with decreasing latitude. It is the lowest at the equator (9.78 m/s^2).

4. Distinguish between Mass and Weight.

[Mar 2023] *[2 Marks]*

Ans:

	Mass	**Weight**
i.	Mass is the quantity of matter contained in an object.	Weight is the force with which the earth attracts an object.
ii.	Mass remains same everywhere.	Weight of an object keeps on changing from place to place.
iii.	Mass is measured in kilogram (kg).	Weight is measured in newton (N).
iv.	Mass is a scalar quantity.	Weight is a vector quantity.
v.	Mass of an object can never be zero.	Weight of an object becomes zero at the centre of the earth.

(Any four points of difference)

5. **Observe the given figure showing the orbit of a planet moving around the Sun and write the *three* laws related to it:**
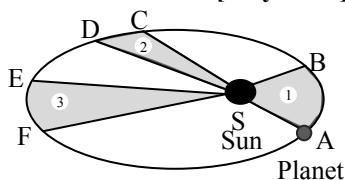
[Mar 2020] *[3 Marks]*

OR

State the laws related to the given diagram:

[Mar 2022] *[3 Marks]*

OR

State Kepler's three laws of motion.

[July 2023] *[3 Marks]*

The orbit of a planet moving around the Sun

Ans:
i. **Kepler's first law:** The orbit of a planet is an ellipse with the sun at one of the foci.
ii. **Kepler's second law:** The line joining the planet and the sun sweeps equal areas in equal intervals of time.
iii. **Kepler's third law:** The square of orbital period of revolution of a planet around the Sun is directly proportional to the cube of the mean distance of the planet from the Sun.

6. **What is free fall? When is it possible?**

[Mar 2024] *[2 Marks]*

Ans:
i. Whenever an object moves under the influence of the force of gravity alone, then the object is said to be under free fall.
ii. Free fall is possible in vacuum only.

7. **Observe the figure and answer the questions:**
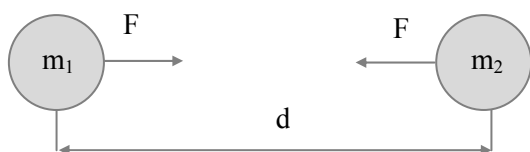
i. **State Newton's universal law of gravitation.**
ii. **If the distance between the two bodies is tripled, how will the gravitational force between them change?**
iii. **What will happen to gravitational force, if mass of one of the objects is doubled?**

[Mar 2024] *[3 Marks]*

Ans:
i. **Newton's universal law of gravitation:** Gravitational force between two bodies in the universe is directly proportional to the product of their masses and inversely proportional to the square of the distance between them.

ii. Gravitational force between the two bodies is given by,

$$F = \frac{Gm_1m_2}{r^2}$$

When distance between the objects is tripled, the force F′ will be,

$$F' = \frac{Gm_1m_2}{(3r)^2} = \frac{Gm_1m_2}{9r^2} = \frac{1}{9}F$$

∴ Force becomes $\frac{1}{9}$ times the initial force.

iii. Consider, the mass m_2 is doubled. Then, the force F′ will be,

$$F' = \frac{Gm_1(2m_2)}{(r)^2} = 2\frac{Gm_1m_2}{r^2} = 2F.$$

∴ Force becomes double the initial force.

Numericals

1. **A metal ball of mass 5 kg falls from a height of 490 m. How much time it will take to reach the ground? (g = 9.8 m/s²)**

[Mar 2019] *[2 Marks]*

Solution:
Given: Mass (M) = 5 kg, height (s) = 490 m, gravitational acceleration (g) = 9.8 m/s²
To find: Time taken (t)
Formula: $s = ut + \frac{1}{2}gt^2$
Calculation: From formula,

$$490 = (0 \times t) + (\frac{1}{2} \times 9.8 \times t^2)$$

∴ $490 = 4.9 \, t^2$

∴ $t^2 = \frac{490}{4.9} = 100$

∴ $t = \textbf{10 s}$

Ans: The metal ball will take **10 s** to reach the ground.

2. **What would be the value of g on the surface of the earth if its mass was twice as large and its radius half of what it is now?**

[Mar 2019] *[3 Marks]*

Solution:
Given: Mass of the earth M′ = 2M, radius of the earth R′ = $\frac{R}{2}$
To find: gravitational acceleration (g′)
Formula: $g = \frac{GM}{R^2}$
Calculation: From formula,

$$g' = \frac{G \times M'}{(R')^2} = \frac{G \times 2M}{\left(\frac{R}{2}\right)^2}$$

Page no. **429** to **465** are purposely left blank.

To see complete chapter buy **Target Notes**

1 Heredity and Evolution

Objective Questions *[1 Mark each]*

1. **Write the *correct* alternative:**

i. _____ is a connecting link between Annelida and Arthropoda. **[Mar 2019]**
  (A) Duck-billed platypus
  (B) *Peripatus*
  (C) Lungfish
  (D) Whale

Ans: (B)

ii. Transfer of information from molecule of DNA to mRNA is called as _____ process. **[Mar 2020]**
  (A) transcription   (B) translation
  (C) translocation   (D) mutation

Ans: (A)

iii. Vestigial organ _____ present in human body is proof of evolution. **[Mar 2023]**
  (A) Human hand   (B) Appendix
  (C) Ear muscles   (D) Tail-bone

Ans: Above question has three possible answers, [Option (B), (C) and (D)].

The above question has been modified for the better understanding of the student as it has three possible answers.

iii. Vestigial organ _____ present in human body is proof of evolution.
  (A) Human hand
  (B) Appendix
  (C) Ear
  (D) Tail

Answer for modified question: (B)

iv. Genetic disorder like sickle cell anemia may be caused due to _____. **[July 2023]**
  (A) mutation
  (B) translation
  (C) translocation
  (D) transcription

Ans: (A)

v. A minor change occurs due to change in position of any nucleotide is termed as _____. **[Mar 2024]**
  (A) transcription   (B) translocation
  (C) mutation   (D) translation

Ans: (C)

2. **Name the following:**
  I am connecting link between Reptilia and mammals. What is my name? **[Mar 2020]**

Ans: Duck-billed platypus

3. **Write the name of indicated part in diagram:**
Human jaw
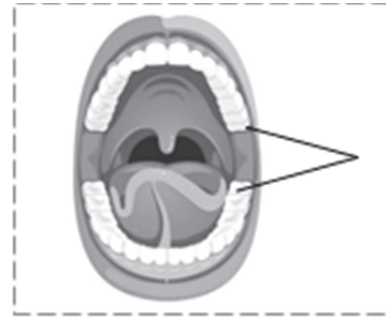
[Mar 2023]

Ans: Part indicated in the diagram: Wisdom teeth

4. **Pick the odd man out :**
  duckbill platypus, pomfret, lungfish, *Peripatus*. **[Mar 2024]**

Ans: pomfret

Hint: *Peripatus,* duck-billed platypus and lungfish are connecting links while pomfret is not. *Peripatus* is the connecting link between annelida and arthropoda; duck-billed platypus is a connecting link between mammals and reptiles and lungfishes are connecting links between fishes and amphibians.

5. **Answer the following:**
  Write the scientific name of human being. **[July 2022]**

Ans: *Homo sapiens.*

Theory Questions

1. **i.** **What do you mean by central dogma?**
  ii. **What is transcription?**
  iii. **What is meant by triplet codon?** **[Mar 2019] *[3 Marks]***

Ans:
i. Central dogma is the process of synthesis of proteins by DNA, through RNA.
ii. Transcription is the process of RNA synthesis.
  OR
  Transcription is the process of synthesis of mRNA from DNA.
iii. Three nucleotides which code for each amino acid is known as triplet codon.

2. **Define vestigial organs. Write any two names of vestigial organs in human body.** **[July 2019] *[2 Marks]***

Ans:
i. Vestigial organs are degenerated or underdeveloped useless organs of organisms.

ii. Appendix, muscle of the ear pinna, tail-bone (coccyx), body hairs, nictitating membrane (third eyelid) and wisdom tooth are the vestigial organs in human body. *(Write any two names)*

3. Explain with suitable examples importance of anatomical evidences in evolution.
[July 2019] *[3 Marks]*

OR

Explain the importance of Anatomical evidences with examples. [Mar 2020] *[3 Marks]*

Ans:
i. Anatomical evidences are the similarities in structures and anatomy between different organisms.
ii. The hand of human, foreleg of ox, flipper of whale and forelimbs of bat appear different superficially or morphologically.
iii. Also, the function of these structures is different in different animals.
iv. However, there is a similarity in the structure of bones and bony joints in the organs of these animals.
v. These similarities indicate that the animals evolved from a common ancestor thus providing proof of evolution.

4. i. Define vestigial organs.
ii. Write name of any *two* vestigial organs in human body.
iii. Explain how one human vestigial organ is functional in another animal.
[Dec 2020] *[3 Marks]*

Ans:
i. *Refer Theory Questions Q. No. 2 (i)*
ii. Some vestigial organs in humans that are functional in other animals are as follows:
a. Appendix: It is fully functional in ruminants for digestion of cellulose.
b. Muscle of the ear pinna: It is useful in monkeys and other animals like rabbits, cows, horses, etc. for movement of ear pinna.
c. Other vestigial organs include the tail-bone (coccyx), body hairs, nictitating membrane (third eyelid), wisdom tooth, etc.

5. Explain Darwin's theory of natural selection.
[Dec 2020] *[2 Marks]*

Ans:
i. Darwin's theory of natural selection is based on the concept of survival of the fittest.
ii. Organisms can reproduce prolifically.
iii. Under limited resources, organisms compete with each other in a life-threatening manner for their survival.
iv. According to this theory, only those organisms survive which show modifications for winning the competition. The selected organisms then give rise to new species with their specific set of characters.

6. Complete the following diagram:
[Mar 2022] *[2 Marks]*
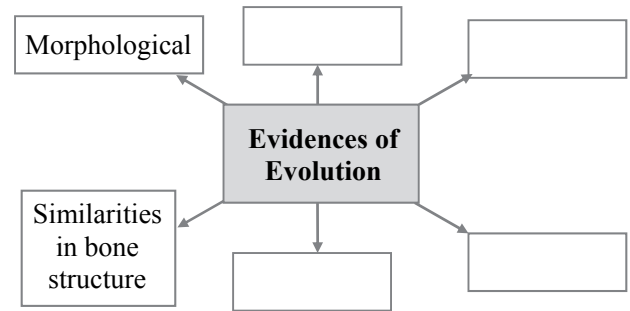
Ans:
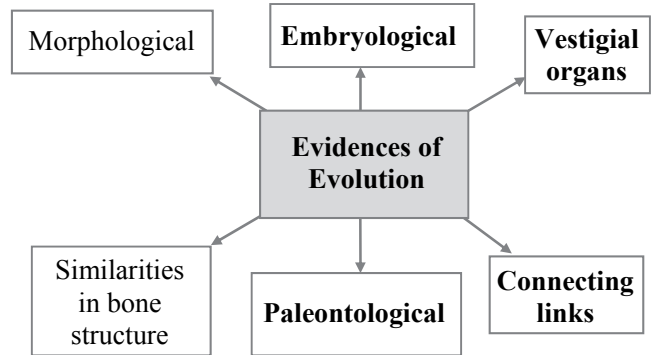
7. Write the objections raised against Darwin's theory of natural selection.
[Mar 2022] *[3 Marks]*

Ans: Some of the main objections raised against Darwin's theory of natural selection are as follows:
i. Natural selection is not the only factor responsible for evolution.
ii. In his theory, Darwin did not explain the inheritance of useful and useless modifications.
iii. No explanation regarding slow and abrupt changes was provided in this theory.

8. Complete the following chart.
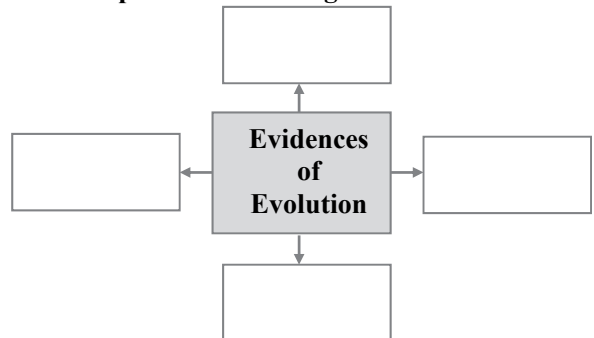
[Mar 2019; July 2022] *[2 Marks]*

Ans: *Refer Theory Questions Q. No. 6*

9. Explain the concept of connecting links with two examples. [July 2022] *[3 Marks]*

Ans:
i. Connecting links are some plants or animals that show morphological characters by which they can be related to two different groups of organisms.

Page no. **468** to **506** are purposely left blank.

To see complete chapter buy **Target Notes**

Objective Questions *[1 Mark each]*

Q.1. (A) Choose the correct option from the given options and complete the sentences

1. It may be said that _____ was the founder of modern historiography. **[Mar, Dec 2020]**
    (A) Voltaire (B) René Descartes
    (C) Leopold Ranké (D) Karl Marx
Ans: It may be said that **Voltaire** was the founder of modern historiography.

2. According to _____, "human history is the history of class struggle." **[Mar 2024]**
    (A) Voltaire
    (B) George Wilhelm Friedrich Hegel
    (C) Leopold Von Ranke
    (D) Karl Marx
Ans: According to **Karl Marx**, "human history is the history of class struggle."

Q.1. (B) Identify the wrong pair in the following and rewrite it.

1. **[Mar 2019, Aug 2022]**

i.	Georg Wilhelm Friedrich Hegel	'Reason in History'
ii.	Leopold von Ranké	'The Theory and Practice of History'
iii.	Herodotus	'The Histories'
iv.	Karl Marx	'Discourse on the Method'

Ans: Karl Marx – Discourse on the Method

2. **[Mar 2023]**

	Thinkers	**Country**
i.	Karl Marx	England
ii.	Michel Foucault	France
iii.	Leopold von Ranke	Germany
iv.	Herodotus	Greece

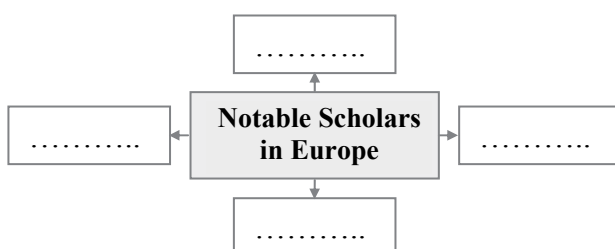**Ans:** Karl Marx – England

Theory Questions

Q.2. (A) Do as directed: *[2 Marks]*

Complete the concept map

1. **[Mar 2023, July 2023]**

```
              ┌──────────┐
              │ ……….. │
              └──────────┘
                   ↑
┌──────────┐  ┌──────────────┐  ┌──────────┐
│ ……….. │←─│ Notable Scholars│─→│ ……….. │
└──────────┘  │   in Europe   │  └──────────┘
              └──────────────┘
                   ↓
              ┌──────────┐
              │ ……….. │
              └──────────┘
```

Ans:
i.   René Descartes
ii. Leopold Von Ranké
iii. Georg Wilhelm Friedrich Hegel
iv. Voltaire
v.   Karl Marx
vi   Simone de Beauvoir
vii Michel Foucault

[Note: Students are expected to write the name of any four notable scholars in Europe.]

Q.2. (B) Write short notes on: *[2 Marks each]*

1. Annales School. **[Dec 2020]**
Ans:
i.   Annales School, was a new school of historiography which arose in France at the onset of twentieth century.
ii. It was started by French historians.
iii. It gave a new direction to history writing.
iv. According to this school, history was not only about the political events, kings, great leaders, politics, diplomacy and wars but it also included the climate, local people, agriculture, trade, technology, means of communication, social divisions and their collective psychology, etc. in the historical times.

2. Dialectics. **[Mar 2023]**
Ans:
i.   The method of analysis of history based on opposites, as presented by the German philosopher Georg Wilhelm Friedrich Hegel is known as 'Dialectics'.
ii. Hegel proposed that human mind can grasp any event only after understanding its meaning in terms of two direct opposites. For e.g. True-False, Good-Bad, etc.
iii. According to this method, a theory is proposed at the beginning, which is called, 'Thesis' followed by another theory contrary to the thesis, called the 'Antithesis'.
iv. A new thesis is then proposed, after a thorough logical discussion, which includes the gist of both, the thesis and the antithesis. This process of arriving at the new thesis is called, 'Synthesis'.

Q.3. Explain the following statements with reasons: *[2 Marks each]*

1. Foucault called his method, 'the Archaeology of Knowledge'. **[Dec 2020, Mar 2024]**

Ans:

i. In the twentieth century, Michel Foucault, a French historian, brought forth a new concept in historiography.

ii. He rejected the practice of arranging historical events in a chronological order. He explained that archaeology does not intend to reach the ultimate historical truth but attempts to explain various transitions in the past.

Hence, Foucault called his method, which gave importance to explain the transitions in history, as 'the Archaeology of Knowledge'.

2. Voltaire said to be the founder of Modern Historiography. **[Mar 2020]**

Ans:

i. The French scholar, Voltaire's original name was François-Marie Arouet.

ii. He was of the opinion that apart from objective truth and chronology of historical events, historiography should also be based on social traditions, trade, economy, agriculture, etc.

iii. He, thus gave importance to the understanding of all aspects of human life while writing history.

iv. As Voltaire contributed greatly to historiography, he is said to be the founder of modern historiography.

*[Note: The above-mentioned question was asked in the Board Question Paper of **Mar 2019** in Answer the following in short (for 3 marks) i.e. Why is Voltaire said to be the founder of modern historiography? In the Board Question Paper of **Mar 2022, Aug 2022** the question asked on the same content was in Write short notes on (for 2 marks) i.e. Write a short note on Voltaire.]*

3. Historical research was driven to focus in depth on various aspects of women's life.

[Aug 2022]

Ans:

i. The restructuring of history from the perspective of women based on this ideology is known as feminist historiography.

ii. The French scholar Simone de Beauvoir established the fundamentals on feminism through her writings.

iii. The feminist historiography emphasized not only on the inclusion of women in history but also on the rethinking of the male dominated perspective of history.

iv. It drove historical research to focus in depth on various aspects of women's life such as their employment, their role in trade union, institutions working for their cause, their family life, etc.

It is this change of perspective which drove the historical research to focus in depth on various aspects of women's life. After 1990, women were portrayed as an independent social class.

Q.5. Answer the following questions in detail:
[3 Marks each]

1. Explain Karl Marx's 'Class Theory'.
[Mar 2019]

Ans: Introduction: The new thesis formulated by Karl Marx led to the rise of new school of thought in the latter half of the 19th century.

i. According to Karl Marx:

a. History was about living people and not about abstract ideas.

b. The fundamental needs of people and the ownership as well as nature of prevalent means of production to meet those needs, shape human relationships.

c. Also as different strata of the society may not get equal access to these means; it causes a division of the society into classes, leading to class struggle.

ii. Karl Marx opined that human history comprised of the history of class struggle, wherein the class owning the means of production economically exploited the rest of the classes. A treatise in form of the book 'Das Kapital' written by him is the most referred book all over the world.

Conclusion: In this way, through his 'Class Theory', Karl Marx gave a new perspective to the world to view history.

2. What is feminist historiography?

Ans: Introduction: The contributions of Feminist Historiography are important in the development of historiography.

i. The restructuring of the history from the perspective of women is known as 'Feminist Historiography'. The fundamentals of feminism were established through the writings of French scholar Simone de Beauvoir.

ii. It emphasized the inclusion of women in history as well as the rethinking of the male dominated perspective of history.

iii. Feminist Historiography also led the historical research to focus in detail on several aspects of women's life such as their employment, their role in trade union, institutions working for their cause, their family life, etc. Due to this, post 1990, women were portrayed as an independent social class in the historical writings.

Conclusion: Historiography has received a new dimension due to feminist historiography.

Page no. **509** to **534** are purposely left blank.

To see complete chapter buy **Target Notes**

Objective Questions *[1 Mark each]*

Q.6. Choose the correct option from the given options and complete the sentences:

1. The essence of democracy is _____.
   [Mar 2019, 2020, 2022, July 2023]
   (A) universal adult franchise
   (B) decentralisation of power
   (C) policy of reservation of seats
   (D) judicial decisions
   Ans: The essence of democracy is **decentralisation of power**.

2. _____ has a power to make changes in the constitution. **[Dec 2020]**
   (A) Parliament
   (B) Local self-governing institutions
   (C) Legislative assembly
   (D) Cooperative institutions
   Ans: **Parliament** has a power to make changes in the constitution.

3. Which of the following laws created a favourable environment for women to secure freedom and self-development? **[Mar 2023]**
   (A) Right to Information Act
   (B) Dowry Prohibition Act
   (C) Food Security Act
   (D) Right to Education Act
   Ans: **Dowry Prohibition Act** created a favourable environment for women to secure freedom and self-development.

4. In Maharastra,_____ seats are reserved for women in local and self- governing institutions.
   [Aug 2022]
   (A) 25%   (B) 30%
   (C) 40%   (D) 50%
   Ans: In Maharastra, **50%** seats are reserved for women in local and self- governing institutions.

5. 73rd and 74th Amendment to the Indian constitution gave a constitutional status to _____. **[Mar 2024]**
   (A) Vidhansabha
   (B) Local self-governing institutions
   (C) Lok Sabha
   (D) Rajya Sabha
   Ans: 73rd and 74th Amendment to the Indian constitution gave a constitutional status to **Local self-governing institutions**.

Theory Questions *[2 Marks each]*

Q.7. State whether the following statements are true or false. Give reasons for your answers:

1. **The nature of Constitution is seen as a living document.** **[Mar 2019, 2023; Dec 2020]**
   Ans: The above statement is **True**.
   Reasons:
   i. Indian Constitution is dynamic.
   ii. It accepts the necessity of modifications according to changing needs of the society. These changes can be brought about by the process of amendment.
   iii. The Parliament has the power to make these changes. But the judiciary has declared that the parliament while amending the Constitution should not alter the 'basic structure' of the Constitution.
   Therefore, it can be said that the Constitution is a living document rather than a closed and static rule book.

2. **Indian democracy is considered the largest democracy in the world.**
   [Mar 2020, Aug 2022, July 2023]
   Ans: The above statement is **True**.
   Reasons:
   i. In democracy, there is direct representation of the Indian people in the Parliament, State legislature and local government.
   ii. Free and fair elections are held at regular intervals in democracy. Everyone has the right to vote irrespective of religion, gender, caste, etc.
   iii. Earlier the voting age was 21 years. It was later reduced to 18 years. This lowering of voting age led to an increased participation of younger generation in the political process. Today, India has the largest number of voters compared to any other democratic nation.
   Therefore, Indian democracy is considered as the largest democracy in the world.

3. **The judgements of court on various subjects have made the political process in India more mature.** **[Mar 2022]**
   Ans: The statement is **True**.
   Reason:
   i. The protection provided to the citizens by fundamental rights in the constitution has been made more meaningful through various decisions of judiciary.

ii.   Some of the important subjects on which the court has given judgements include rights of children, protection of human rights, protection of the honour and dignity of women, individual freedom, and tribal empowerment.

Therefore, the judgements of court on various subjects have made the political process in India more mature.

Q.8.   (A) Explain the following concepts:

1.   Right to Information.
[Mar 2019, 2020; Aug 2022; July 2023]
Ans:
i.   In 2005, the Parliament of India enacted a new legislation called the 'Right to Information Act'.
ii.   The main objective of the Right to Information Act is to empower the citizens, promote transparency and accountability in the working of the Government and make our democracy work for the people in real sense.
iii. It increases people's participation in administration. It also makes administration more responsive to the requirements of people. This increased communication between citizens and government helps in strengthening democracy and in building a relationship of trust between them.
iv.   Thus, Right to Information is a big step towards making the citizens informed about the functioning of the Government. Also, it has made the government more transparent and has reduced the element of secrecy in the working of the government.

2.   Right to Vote.   [Dec 2020]
Ans:
i.   After independence, the Indian Constitution guaranteed adult suffrage by giving the right to vote equally, to both men and women above the age of 21, irrespective of their caste, religion, social or economic status.
ii.   Later, this voting age was reduced from 21 years to 18 years. It has encouraged more young voters to take part in the political process.
iii. Such provision has made India the largest democracy in the world.

3.   Rights based approach.   [Mar 2024]
Ans:
i.   In the decades after independence, efforts were made towards democratisation of India.
ii.   In this process, citizens were considered as 'beneficiaries' of reforms.
iii. In the last few decades, this approach has changed and the democratic reforms which lead to development are considered as 'rights' of citizens.
iv.   Accordingly, citizens in India have got Right to Education, Right to Information and Rights to Food Act.

Q.9.   Answer in brief:

1.   Which particular Laws/Acts created a favourable environment for protection of freedom of women and secure their development?   [Mar 2019]
OR
Which decisions of the court has resulted in protection of honour and dignity of women?
[Mar 2022]
Ans: The Court administers justice to all citizens of India on behalf of the government. Following are the decisions of the court that have resulted in the protection of honour and dignity of women.
i.   The enforcement of the Domestic Violence Prohibition Act by the Court has resulted in the protection of honour and dignity of women. This Act has rejected traditional forms of domination and authoritarianism. It also expanded the scope of Indian democracy to make it inclusive in true sense.
ii.   Even the Dowry Prohibition Act, act against sexual harassment and the right to have an equal share in the property of the father and husband has resulted in the protection of honour and dignity of women and thus, created a favourable environment for securing their development.

2.   What is meant by establishment of social justice?   [Mar 2023, 2024]
Ans:
i.   Social justice means that in the society the citizens must interact and treat one another on the basis of equality.
ii.   Establishing a progressive developed society based on social justice and equality is one of the objectives of the Indian Constitution. It stands for the elimination of social discrimination on the grounds of colour, caste, creed, religion, gender or place of birth.
iii. Democratic policies must be inclusive i.e. one must try to bring all sections of the society into mainstream.
iv.   Accordingly, various efforts have been taken to establish social justice in India.
      For e.g. To establish justice and equality, certain efforts are made like Policy of reservation of seats for SC and ST, Prevention of Atrocities Act, provision for minorities and laws relating to women and provisions for representation.

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To see complete chapter buy **Target Notes**

1 Field Visit

Objective Questions [1 Mark each]

Q.1. Identify the odd man out:

1. Main purpose of field visit: **[Dec 2020]**
   i. Geographical ii. Historical
   iii. Entertainment iv. Cultural
Ans: Entertainment

2. We should carry _____ for a field visit to collect information. **[Mar 2024]**
   i. chair ii. black board
   iii. water bottle iv. questionnaire
Ans: We should carry **questionnaire** for a field visit to collect information.

Q.2. State whether the sentences are right or wrong. Correct the wrong ones:

1. During field visit, vegetation is not the indicator of difference in precipitation. **[Mar 2019]**
Ans: Wrong
   During field visit, vegetation is the indicator of difference in precipitation.

Q.3. Match the following: **[Mar 2022]**

	'A'		'B'
(1)	Field Visit *(Chapter. 1)*	(i)	Tourist place
(2)	Pico De Nebline *(Chapter. 3)*	(ii)	Goa
(3)	Most Urbanised State *(Chapter. 7)*	(iii)	Sample questionnaire
(4)	Rio de Janeiro *(Chapter. 9)*	(iv)	Himachal Pradesh
		(v)	Highest peak in Brazil

Ans:

	'A'		'B' (Answers)
(1)	Field Visit	(iii)	Sample questionnaire
(2)	Pico De Neblina	(v)	Highest peak in Brazil
(3)	Most Urbanised State	(ii)	Goa
(4)	Rio de Janeiro	(i)	Tourist place

[Note: The included sub-questions in the above question are from various chapters, therefore we have given the no. of chapters along with each sub-question for better understanding.]

Theory Questions

Q.4. Write short notes: **[2 Marks]**
1. Items to be carried for a field visit. **[Mar 2023]**
Ans: The aim of field visit is to gain geographical information of any region firsthand. So for a field visit, the following things should be carried:
i. Identity card
ii. Notebook and questionnaire
iii. Pen
iv. Pencil
v. Ziplock bags to collect samples
vi. Camera
vii. Binoculars
viii. Magnetic compass
ix. Map of the place
x. Information booklet about the place to be visited
xi. First aid kit
xii. GPS enabled mobile phone
xiii. Cap
xiv. Water bottle, etc.

Q.5. Answer the following: **[4 Marks each]**

1. How will you manage the litter during the field visit? **[Mar 2019, July 2023]**
Ans:
i. It is our social responsibility to ensure that the cleanliness and sanctity of the place of visit is not disturbed during our visit.
ii. So during field visit, we must ensure that we do not throw trash or litter around us.
iii. We must use the dustbins for throwing empty packets of snacks, empty water bottles, left-over food items, etc. Also, we must try to segregate dry and wet waste.
iv. We must carry huge garbage bags so as to use them to collect trash in absence of a dustbin or if the dustbin is overflowing with garbage. This garbage bag can be disposed later.

2. Prepare a questionnaire for a field visit to a sugar factory. **[Dec 2020]**
                    OR
Prepare a questionnaire for a field visit to a factory. **[Mar 2024]**
Ans: A questionnaire for a field visit to a factory will be as follows:
i. When was the factory established?
ii. Which product is manufactured in the factory?

iii.   Where does the raw material required for the production come from?

iv.   Who provides water supply to the factory?

v.   In which market is the final product sold? How far is this market from the factory?

vi.   While setting up this factory, how many workers were provided with the means of livelihood?

vii.   Which are the various roadways or railways that can be used to reach the factory?

viii.   What provisions have been made for the betterment of workers?

ix.   What precautions have been taken to prevent a fire hazard?

x.   What precautions have been taken to prevent or reduce environmental pollution?

3.   If you were a part of field visit, what preparations would you make? Prepare a questionnaire for a field visit to a forest.
                                                        [Mar 2022]

Ans:

i.   If I were a part of the field visit, I would have prepared in the following manner:

a.   I would have collected the maps of both, the place to be visited as well as the route to be taken.

b.   I would have gotten information of the place of field visit through internet, books, etc.

c.   With the help of teacher I would have prepared a questionnaire which would have been useful to get information from local people, related officers, guides during field visit.

d.   I would have carried a first aid kit, GPS device, torch, dry snacks, water bottle, etc. during the field visit.

ii.   **Questionnaires for a field visit to a forest will be follows:**

a.   What is the type of the forest? (Evergreen, Deciduous forest, etc. or Reserved, Protected forest etc.)

b.   What is the location of the forest?

c.   What type of climate is found?

d.   Which type of vegetation is mainly found in the forest?

e.   Which wild animals are found in the forest?

f.   Does any river pass through the forest?

g.   What kind of other natural resources are found in the forest?

h.   Are there any human settlements in the forest or near the forest?

j.   What effect does the forest have on the occupation of nearest human settlements?

k.   What measures could be taken for the conservation of trees and animals?

4.   Suggest measures to reduce river pollution during a field visit.   [Mar 2023]

Ans: To reduce river pollution during a field visit, the following measures can be taken:

i.   It is our social responsibility to ensure that the cleanliness and sanctity of the place of visit is not disturbed during our visit.   So during field visit, we must ensure that we do not throw trash or litter around us.

ii.   We must ensure that we do not throw trash or litter into the river. We must use the dustbins for throwing empty packets of snacks, empty water bottles, left-over food items, etc. Also, we must try to segregate dry and wet waste.

iii.   We must carry huge garbage bags so as to use them to collect trash in absence of a dustbin or if the dustbin is overflowing with garbage. This garbage bag can be disposed later.

iv.   Apart from this, we can arrange pollution awareness programs for local people through street play.

v.   Moreover, we can give information about the adverse effects of activities like washing clothes, vehicle cleaning, etc. which are carried out near the rivers.

5.   Prepare a questionnaire for an interview with a farmer during the field visit.
                                                        [Aug 2022]

Ans: During the field visit, a questionnaire for an interview with a farmer will be as follows:
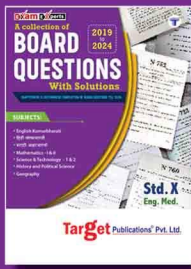
i.   What is your name?

ii.   What is the total area of the farm?

iii.   Is this your own farm?

iv.   Can you tell about the soil in your farm?

v.   What type of crops do you grow in your farm?

vi.   Tell me about irrigation management.

vii.   Which method is used for farming? (Organic or Inorganic)

viii.   Which fertilisers are used for your farm?

ix.   Is this commercial or subsistence farming?

x.   Do you take any help or advice of experts or agricultural institution in your work?

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To see complete chapter buy **Target Notes**