

SAMPLE CONTENT

SOLUTIONS TO
SSC
BOARD
QUESTION
BANK

Based on Question Bank released by
Maharashtra State Board



STD X: ENGLISH / SEMI ENGLISH MEDIUM

Science (Part I&II) | Maths (Part I&II)

Target Publications® Pvt. Ltd.

SOLUTIONS TO SSC BOARD QUESTION BANK

English Medium / Semi English

Salient Features

- Covers solutions to the Entire Question Bank of Std. X released by Maharashtra State Board in the March 2021
- Questions from reduced syllabus (2021-22) are marked with symbol **R**
- Includes Mathematics (Part I and II), Science and Technology (Part I and II)
- Answers framed for all questions are based on Government Textbook and as per the prescribed marking scheme
- Hints provided for questions wherever deemed necessary.

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PREFACE

The Question Bank for Std. X was released by the Maharashtra State Board in the month of March 2021 as a respite to all the SSC students whose education had suffered due to the ongoing pandemic & the resultant restrictions at that point of time. The board exam for the year 2021 couldn't be conducted due to the pandemic but the question bank released by the Board remains a guiding light for all the students who will be appearing for the board exam in the year 2022 and the further years as well.

Target's '**Solutions to SSC Board Question Bank**' is intended for every state board student of standard X. As the name suggests, the book includes the solutions to each and every question that was provided in the question bank. The book encompasses all the question types as per the given sequence in the question bank for each subject, that is, for Mathematics (Part I and II), Science and Technology (Part 1 and 2). Keeping in the mind syllabus reduced for the academic year 2021-22, questions belonging to the reduced syllabus are marked with symbol **R**.

The answers framed in the book are completely based on the Government Textbook. At certain points, we have simplified or modified the answers for the ease of understanding. We have ensured that the answers are as per the prescribed marking scheme so that the student's efforts bear the desired fruits.

To aid students, hints are provided for questions wherever deemed necessary.

We hope that the students find the book as one stop solution to the Question Bank .

- Publisher

Edition: First

The journey to create a complete book is strewn with triumphs, failures and near misses. If you think we've nearly missed something or want to applaud us for our triumphs, we'd love to hear from you.

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A book affects eternity; one can never tell where its influence stops

Disclaimer

This reference book is transformative work based on Solutions to '**SSC Board Question Bank (2020-21)**' for Mathematics (Part I and II), Science and Technology (Part I and II) released by the Maharashtra State Bureau of Textbook Production and Curriculum Research, Pune. We the publishers are making this reference book which constitutes as fair use of textual contents which are transformed by adding and elaborating, with a view to simplify the same to enable the students to understand, memorize and reproduce the same in examinations.

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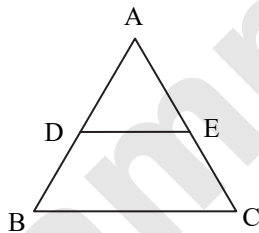
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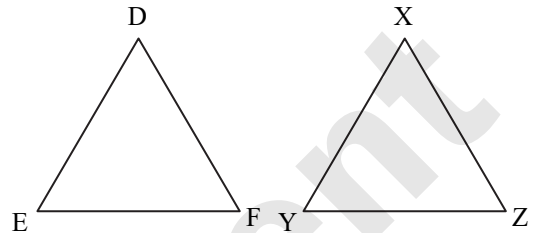
Q.1. (A) MCQ [1 Mark]

1. If $\triangle ABC \sim \triangle PQR$ and $AB:PQ = 3 : 4$ then $A(\triangle ABC) : A(\triangle PQR) = ?$
 (A) 9 : 25 (B) 9 : 16
 (C) 16 : 9 (D) 25 : 9
2. Which of the following is not a test of similarity?
 (A) AAA (B) SAS
 (C) SAA (D) SSS
3. If $\triangle XYZ \sim \triangle PQR$ and $A(\triangle XYZ) = 25\text{cm}^2$, $A(\triangle PQR) = 4\text{cm}^2$ then $XY:PQ = ?$
 (A) 4 : 25 (B) 2 : 5
 (C) 5 : 2 (D) 25 : 4
4. Ratio of areas of two similar triangles is 9 : 25. _____ is the ratio of their corresponding sides.
 (A) 3 : 4 (B) 3 : 5
 (C) 5 : 3 (D) 25 : 81
5. Given $\triangle ABC \sim \triangle DEF$, if $\angle A = 45^\circ$ and $\angle E = 35^\circ$ then $\angle B = ?$
 (A) 45° (B) 35°
 (C) 25° (D) 40°
6. In fig, seg $DE \parallel$ sec BC , identify correct statement.



- (A) $\frac{AD}{DB} = \frac{AE}{AC}$ (B) $\frac{AD}{DB} = \frac{AB}{AC}$
 (C) $\frac{AD}{DB} = \frac{EC}{AC}$ (D) $\frac{AD}{DB} = \frac{AE}{EC}$
7. If $\triangle XYZ \sim \triangle PQR$ then $\frac{XY}{PQ} = \frac{YZ}{QR} = ?$
 (A) $\frac{XZ}{PR}$ (B) $\frac{XZ}{PQ}$
 (C) $\frac{XZ}{QR}$ (D) $\frac{YZ}{PQ}$
8. If $\triangle ABC \sim \triangle LMN$ and $\angle A = 60^\circ$ then $\angle L = ?$
 (A) 45° (B) 60°
 (C) 25° (D) 40°

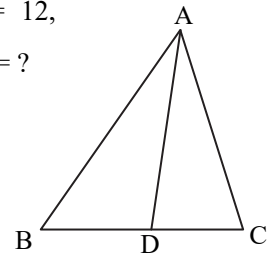
9. In $\triangle DEF$ and $\triangle XYZ$, $\frac{DE}{XY} = \frac{FE}{YZ}$ and $\angle E \cong \angle Y$. _____ test gives similarity between $\triangle DEF$ and $\triangle XYZ$.



- (A) AAA (B) SAS
 (C) SAA (D) SSS

10. In fig. $BD = 8$, $BC = 12$, $B-D-C$, then $\frac{A(\triangle ABC)}{A(\triangle ABD)} = ?$

- (A) 2 : 3
 (B) 3 : 2
 (C) 5 : 3
 (D) 3 : 4

**Answers:**

1. (B) 2. (C) 3. (C) 4. (B)
 5. (B) 6. (D) 7. (A) 8. (B)
 9. (B) 10. (B)

Hints:

1. $\frac{A(\triangle ABC)}{A(\triangle PQR)} = \frac{AB^2}{PQ^2}$
 $= \frac{3^2}{4^2} = \frac{9}{16}$
 ...[Theorem of areas of similar triangles]
 $\therefore A(\triangle ABC) : A(\triangle PQR) = 9 : 16$
3. $\frac{A(\triangle XYZ)}{A(\triangle PQR)} = \frac{XY^2}{PQ^2}$
 ...[Theorem of areas of similar triangles]
 $\therefore \frac{25}{4} = \frac{XY^2}{PQ^2}$
 $\therefore \frac{XY}{PQ} = \frac{5}{2}$
 $\therefore XY : PQ = 5 : 2$
4. Let $\triangle ABC$ and $\triangle PQR$ be two similar triangles. According to the given condition,
 $\frac{A(\triangle ABC)}{A(\triangle PQR)} = \frac{9}{25}$



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

...[Theorem of areas of similar triangles]

$\therefore \frac{AB^2}{PQ^2} = \frac{9}{25}$

$\therefore \frac{AB}{PQ} = \frac{3}{5}$

$\therefore 3 : 5$ is the ratio of their corresponding sides.

5. $\Delta ABC \sim \Delta DEF$

$\therefore \angle B \cong \angle E$

...[Corresponding angles of similar triangles]

But $\angle E = 35^\circ$...[Given]

$\therefore \angle B = 35^\circ$

6. Basic proportionality theorem

8. $\Delta ABC \sim \Delta LMN$

$\therefore \angle A \cong \angle L$

...[Corresponding angles of similar triangles]

But $\angle A = 60^\circ$...[Given]

$\therefore \angle L = 60^\circ$

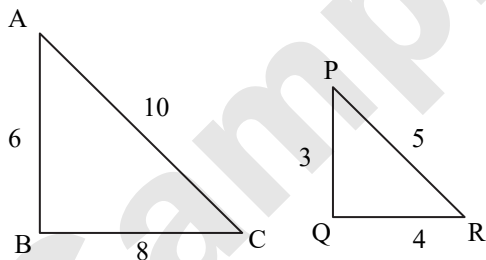
10. Note that ΔABC and ΔABD have same height.

$\therefore \frac{A(\Delta ABC)}{A(\Delta ABD)} = \frac{BC}{BD}$... The ratio of the areas of two triangles with equal heights is equal to the ratio of their corresponding bases.

$\therefore \frac{A(\Delta ABC)}{A(\Delta ABD)} = \frac{12}{8} = \frac{3}{2}$

Q.1 (B) Solve [1 Mark]

1. Are triangles in figure similar? If yes, then write the test of similarity.



Solution:

In ΔABC and ΔPQR ,

$\frac{AB}{PQ} = \frac{6}{3} = \frac{2}{1}$... (i)

$\frac{BC}{QR} = \frac{8}{4} = \frac{2}{1}$... (ii)

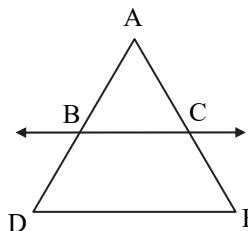
$\frac{AC}{PR} = \frac{10}{5} = \frac{2}{1}$... (iii)

$\therefore \frac{AB}{PQ} = \frac{BC}{QR} = \frac{AC}{PR}$...[From (i), (ii) and (iii)]

$\therefore \Delta ABC \sim \Delta PQR$...[SSS test of similarity]

\therefore The triangles in the figure are similar by SSS test of similarity.

2. In fig., line $BC \parallel$ line DE , $AB = 2$, $BD = 3$, $AC = 4$ and $CE = x$, then find the value of x .



Solution:

In ΔADE , line $BC \parallel$ seg DE ...[Given]

$\therefore \frac{AB}{BD} = \frac{AC}{CE}$...[Basic proportionality theorem]

$\therefore \frac{2}{3} = \frac{4}{x}$...[Given]

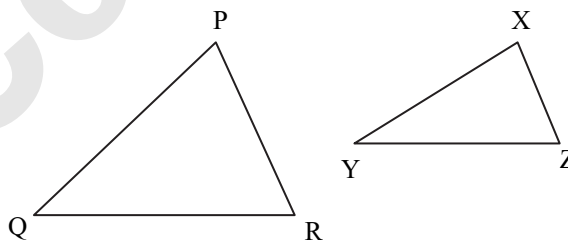
$\therefore x = 4 \times \frac{3}{2}$

$= 2 \times 3$

$\therefore x = 6$

3. State whether the following triangles are similar or not: If yes, then write the test of similarity.

$\angle P = 35^\circ$, $\angle X = 35^\circ$ and $\angle Q = 60^\circ$, $\angle Y = 60^\circ$



Solution:

In ΔPQR and ΔXYZ ,

$\angle P = 35^\circ$, $\angle X = 35^\circ$, $\angle Q = 60^\circ$ and $\angle Y = 60^\circ$

...[Given]

$\therefore \angle P \cong \angle X$ and $\angle Q \cong \angle Y$

$\therefore \Delta PQR \sim \Delta XYZ$...[AA test of similarity]

\therefore The triangles in the figure are similar by AA test of similarity.

4. If $\Delta ABC \sim \Delta LMN$ and $\angle B = 40^\circ$, then $\angle M = ?$ Give reason.

Solution:

$\Delta ABC \sim \Delta LMN$...[Given]

$\therefore \angle B \cong \angle M$

... (i) [Corresponding angles of similar triangles]

But $\angle B = 40^\circ$...[Given]

$\therefore \angle M = 40^\circ$...[From (i)]

5. Areas of two similar triangles are in the ratio 144:49. Find the ratio of their corresponding sides.

Solution:

Let the areas of two similar triangles be A_1 , A_2 and their corresponding sides be S_1 , S_2 respectively.



$\therefore \frac{A_1}{A_2} = \frac{144}{49}$... (i) [Given]
 $\frac{A_1}{A_2} = \frac{S_1^2}{S_2^2}$
 ... [Theorem of areas of similar triangles]
 $\therefore \frac{144}{49} = \frac{S_1^2}{S_2^2}$ [From (i)]
 $\therefore \frac{S_1}{S_2} = \frac{12}{7}$... [Taking square root of both sides]
 \therefore The ratio of the corresponding sides of the given triangles is 12:7.

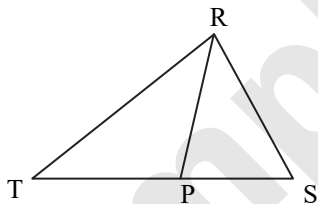
6. $\Delta PQR \sim \Delta SUV$. Write pairs of congruent angles.

Solution:
 $\Delta PQR \sim \Delta SUV$... [Given]
 $\therefore \angle P \cong \angle S, \angle Q \cong \angle U, \angle R \cong \angle V$
 ... [Corresponding angles of similar triangles]

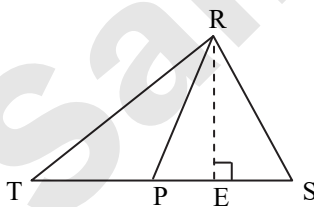
7. $\Delta ABC \sim \Delta DEF$. Write the ratios of their corresponding sides.

Solution:
 $\Delta ABC \sim \Delta DEF$... [Given]
 \therefore The ratios of corresponding sides of the given triangles are $\frac{AB}{DE}, \frac{BC}{EF}$ and $\frac{AC}{DF}$.

8. In fig., $TP = 10$ cm, $PS = 6$ cm. $\frac{A(\Delta RTP)}{A(\Delta RPS)} = ?$



Solution:



Draw $RE \perp TS$, T-E-S
 ΔRTP and ΔRPS have same height RE.

$$\frac{A(\Delta RTP)}{A(\Delta RPS)} = \frac{TP}{PS}$$

... [Triangles having equal height]

$$= \frac{10}{6}$$

... [Given]

$\therefore \frac{A(\Delta RTP)}{A(\Delta RPS)} = \frac{5}{3}$

9. Ratio of corresponding sides of two similar triangles is 4:7, then find the ratio of their areas.

Solution:
 Let the corresponding sides of similar triangles be s_1 and s_2 .
 Let A_1 and A_2 be their corresponding areas.
 $s_1 : s_2 = 4:7$... [Given]
 $\therefore \frac{s_1}{s_2} = \frac{4}{7}$... (i)
 $\frac{A_1}{A_2} = \frac{s_1^2}{s_2^2}$
 ... [Theorem of areas of similar triangles]

$$= \left(\frac{s_1}{s_2}\right)^2$$

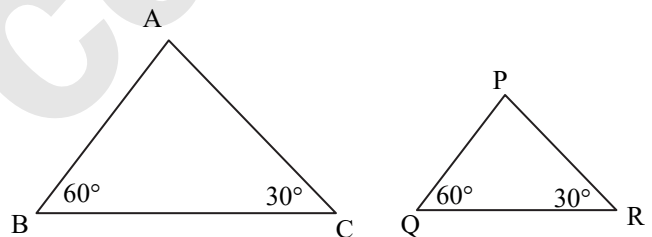
$$= \left(\frac{4}{7}\right)^2$$

... [From (i)]

$$= \frac{16}{49}$$

\therefore Ratio of areas of similar triangles = 16:49

10. Write the test of similarity for triangles given in figure.

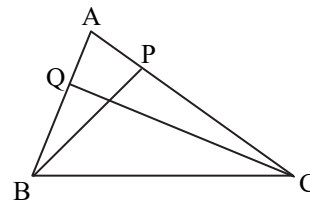


Solution:

In ΔABC and ΔPQR
 $\angle ABC \cong \angle PQR$... [Each of measure 60°]
 $\angle ACB \cong \angle PRQ$... [Each of measure 30°]
 $\therefore \Delta ABC \sim \Delta PQR$... [AA test of similarity]

Q.2 (A) Complete the activities. [2 Marks]

1. In fig. $BP \perp AC$, $CQ \perp AB$, A-P-C and A-Q-B then show that ΔAPB and ΔAQC are similar.



In ΔAPB and ΔAQC

$\angle APB = \square^\circ$... (i)

$\angle AQC = \square^\circ$... (ii)

$\angle APB \cong \angle AQC$... [From (i) and (ii)]

$\angle PAB \cong \angle QAC$...

$\Delta APB \sim \Delta AQC$...



Solution:

In $\triangle APB$ and $\triangle AQC$

$\angle APB = 90^\circ \dots(i)$

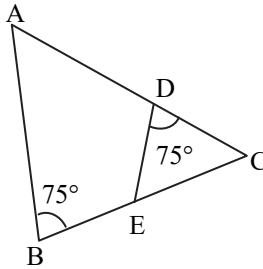
$\angle AQC = 90^\circ \dots(ii)$

$\therefore \angle APB \cong \angle AQC \dots[\text{From (i) and (ii)}]$

$\angle PAB \cong \angle QAC \dots[\text{Common angle}]$

$\therefore \triangle APB \sim \triangle AQC \dots[\text{AA test of similarity}]$

2. Observe the figure and complete following activity.



In fig, $\angle B = 75^\circ, \angle D = 75^\circ$

$\angle B \cong \angle D \dots[\text{each of } 75^\circ]$

$\angle C \cong \angle C \dots[\text{Common angle}]$

$\triangle ABC \sim \triangle EDC \dots[\text{AA similarity test}]$

Solution:

In fig, $\angle B = 75^\circ, \angle D = 75^\circ$

$\angle B \cong \angle D \dots[\text{each of } 75^\circ]$

$\angle C \cong \angle C \dots[\text{Common angle}]$

$\triangle ABC \sim \triangle EDC \dots[\text{AA similarity test}]$

3. $\triangle ABC \sim \triangle PQR, A(\triangle ABC) = 80\text{sq.cm}, A(\triangle PQR) = 125\text{sq.cm}$, then complete $\frac{A(\triangle ABC)}{A(\triangle PQR)} = \frac{80}{125} = \frac{\square}{\square}$, hence $\frac{AB}{PQ} = \frac{\square}{\square}$

Solution:

$\frac{A(\triangle ABC)}{A(\triangle PQR)} = \frac{80}{125} = \frac{16}{25} \dots(i)[\text{Given}]$

$\frac{A(\triangle ABC)}{A(\triangle PQR)} = \frac{AB^2}{PQ^2}$

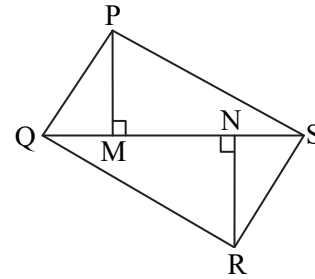
$\dots(ii)[\text{Theorem of areas of similar triangles}]$

$\therefore \frac{AB^2}{PQ^2} = \frac{16}{25} \dots[\text{From (i) and (ii)}]$

Hence $\frac{AB}{PQ} = \frac{4}{5}$

$\dots[\text{Taking square root of both sides}]$

4. In fig., $PM = 10 \text{ cm}, A(\triangle PQS) = 100 \text{ sq.cm}, A(\triangle QRS) = 110 \text{ sq.cm}$, then NR ? $\triangle PQS$ and $\triangle QRS$ having seg QS common base.



Areas of two triangles whose base is common are in proportion of their corresponding \square .

$\frac{A(\triangle PQS)}{A(\triangle QRS)} = \frac{\square}{NR}$

$\frac{100}{110} = \frac{\square}{NR}$

$NR = \square \text{ cm}$

Solution:

$\triangle PQS$ and $\triangle QRS$ having seg QS common base. Areas of two triangles whose base is common are in proportion of their corresponding heights.

$\frac{A(\triangle PQS)}{A(\triangle QRS)} = \frac{PM}{NR}$

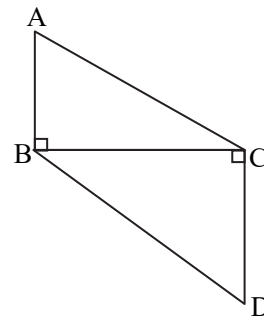
$\frac{100}{110} = \frac{10}{NR}$

$\therefore NR = \frac{110 \times 10}{100}$

$\therefore NR = 11 \text{ cm}$

Q.2 (B)

1. In fig., $AB \perp BC$ and $DC \perp BC, AB = 6, DC = 4$ then $\frac{A(\triangle ABC)}{A(\triangle BCD)} = ?$



Solution:

$\triangle ABC$ and $\triangle BCD$ have same base BC .

$\therefore \frac{A(\triangle ABC)}{A(\triangle BCD)} = \frac{AB}{DC} \dots[\text{Triangles having equal base}]$

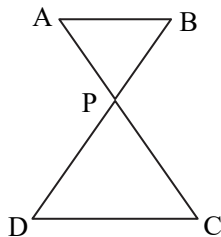
$= \frac{6}{4} \dots[\text{Given}]$

$\therefore \frac{A(\triangle ABC)}{A(\triangle BCD)} = \frac{3}{2}$



2. In fig., seg AC and seg BD intersect each other at point P.

$$\frac{AP}{PC} = \frac{BP}{PD}, \text{ then prove that } \triangle ABP \sim \triangle CDP$$



Proof:

In $\triangle ABP$ and $\triangle CDP$,

$$\frac{AP}{PC} = \frac{BP}{PD} \quad \dots[\text{Given}]$$

$\angle APB \cong \angle CPD$...[Vertically opposite angles]

$\therefore \triangle ABP \sim \triangle CDP$...[SAS test of similarity]

[Note: The question has been modified.]

3. $\triangle ABP \sim \triangle DEF$ and

$$A(\triangle ABP) : A(\triangle DEF) = 144 : 81, \text{ then } AB : DE = ?$$

Solution:

$$\frac{A(\triangle ABP)}{A(\triangle DEF)} = \frac{144}{81} \quad \dots(\text{i})[\text{Given}]$$

$$\frac{A(\triangle ABP)}{A(\triangle DEF)} = \frac{AB^2}{DE^2}$$

...[Theorem of areas of similar triangles]

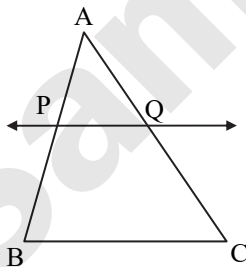
$$\therefore \frac{AB^2}{DE^2} = \frac{144}{81} \quad \dots[\text{From (i) and (ii)}]$$

$$\therefore \frac{AB}{DE} = \frac{12}{9} \text{ or } \frac{4}{3}$$

...[Taking square root of both sides]

4. From given information, is $PQ \parallel BC$?

$$AP = 2, PB = 4, AQ = 3, QC = 6$$



Solution:

$$\frac{AP}{PB} = \frac{2}{4} = \frac{1}{2} \quad \dots(\text{i})[\text{Given}]$$

$$\frac{AQ}{QC} = \frac{3}{6} = \frac{1}{2} \quad \dots(\text{ii})$$

In $\triangle ABC$,

$$\frac{AP}{PB} = \frac{AQ}{QC} = \frac{1}{2} \quad \dots[\text{From (i) and (ii)}]$$

\therefore line $PQ \parallel$ side BC

...[Converse of basic proportionality theorem]

5. Areas of two similar triangles are 225cm^2 and 81cm^2 . If side of smaller triangle is 12 cm, find corresponding side of major triangle.

Solution:

Let the areas of two similar triangles be A_1 and A_2 .

$$A_1 = 225\text{ cm}^2 \text{ and } A_2 = 81\text{ cm}^2$$

Let the corresponding sides of triangles be s_1 and s_2 respectively.

$$s_1 = 12\text{ cm}$$

$$\frac{A_1}{A_2} = \frac{s_1^2}{s_2^2}$$

...[Theorem of areas of similar triangles]

$$\therefore \frac{225}{81} = \frac{s_1^2}{12^2}$$

$$\therefore s_1^2 = \frac{225 \times 12^2}{81}$$

$$\therefore s_1 = \frac{15 \times 12}{9}$$

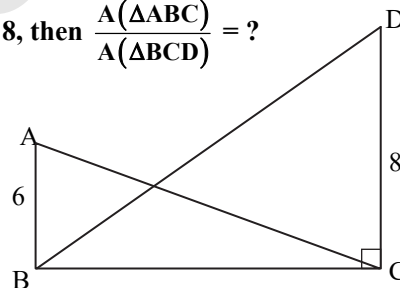
...[Taking square root of both sides]

$$\therefore s_1 = 20\text{ cm}$$

\therefore The length of the corresponding side of the bigger triangle is 20 cm.

6. In fig., $\angle ABC = 90^\circ$, $\angle DCB = 90^\circ$, $AB = 6$,

$$DC = 8, \text{ then } \frac{A(\triangle ABC)}{A(\triangle BCD)} = ?$$



Solution:

$\triangle ABC$ and $\triangle BCD$ have same base BC .

$$\therefore \frac{A(\triangle ABC)}{A(\triangle BCD)} = \frac{AB}{DC} \quad \dots[\text{Triangles having equal base}]$$

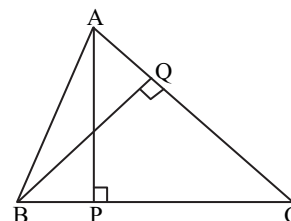
$$= \frac{6}{8}$$

$$\therefore \frac{A(\triangle ABC)}{A(\triangle DCB)} = \frac{3}{4}$$

- Q.3 (A) Complete the following activities.**

[3 Marks]

1. In $\triangle ABC$, $AP \perp BC$ and $BQ \perp AC$, $B-P-C$, $A-Q-C$, then show that $\triangle CPA \sim \triangle CQB$. If $AP = 7$, $BQ = 8$, $BC = 12$, then $AC = ?$





In $\triangle CPA$ and $\triangle CQB$
 $\angle CPA \cong \angle \square$...[each 90°]
 $\angle ACP \cong \angle \square$ [common angle]
 $\triangle CPA \sim \triangle CQB$...[\square similarity test]
 $\frac{AP}{BQ} = \frac{\square}{BC}$
 ...[corresponding sides of similar triangles]

$$\frac{7}{8} = \frac{\square}{12}$$

$$AC \times \square = 7 \times 12$$

$$AC = 10.5$$

Solution:

In $\triangle CPA$ and $\triangle CQB$
 $\angle CPA \cong \angle \square$ [each 90°]
 $\angle ACP \cong \angle \square$ [common angle]
 $\triangle CPA \sim \triangle CQB$...[\square similarity test]
 $\frac{AP}{BQ} = \frac{\square}{BC}$
 ...[corresponding sides of similar triangle]

$$\frac{7}{8} = \frac{\square}{12}$$

$$AC \times \square = 7 \times 12$$

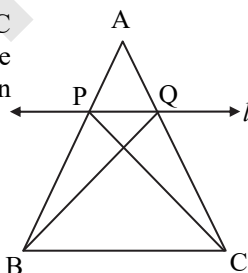
$$AC = \frac{7 \times 12}{8}$$

$$= \frac{7 \times 3}{2} = \frac{21}{2}$$

$$AC = 10.5$$

2. A line is parallel to one side of triangle which intersects remaining two sides in two distinct points then that line divides sides in same proportion.

Given: In $\triangle ABC$ line $l \parallel$ side BC and line l intersect side AB in P and side AC in Q .



To prove: $\frac{AP}{PB} = \frac{AQ}{QC}$

Construction: Draw CP and BQ

Proof:

$\triangle APQ$ and $\triangle PQB$ have equal height.
 $\frac{A(\triangle APQ)}{A(\triangle PQB)} = \frac{\square}{PB}$
 ...[areas in proportion of base](i)
 $\frac{A(\triangle APQ)}{A(\triangle PQC)} = \frac{\square}{QC}$
 ...[areas in proportion of base](ii)
 $\triangle PQC$ and $\triangle PQB$ have \square is common base.

Seg $PQ \parallel$ Seg BC , hence height of $\triangle APQ$ and $\triangle PQB$.

$$A(\triangle PQC) = A(\triangle \square) \dots(\text{iii})$$

$$\frac{A(\triangle APQ)}{A(\triangle PQB)} = \frac{A(\triangle \square)}{A(\triangle \square)} \dots[(\text{i}), (\text{ii}), \text{ and } (\text{iii})]$$

$$\frac{AP}{PB} = \frac{AQ}{QC} \dots[(\text{i}) \text{ and } (\text{ii})]$$

Solution:

Proof:

$\triangle APQ$ and $\triangle PQB$ have equal height.

$$\frac{A(\triangle APQ)}{A(\triangle PQB)} = \frac{AP}{PB}$$

...[areas in proportion of base](i)

$$\frac{A(\triangle APQ)}{A(\triangle PQC)} = \frac{AQ}{QC}$$

...[areas in proportion of base](ii)

$\triangle PQC$ and $\triangle PQB$ have PQ is common base.

Seg $PQ \parallel$ Seg BC , hence height of $\triangle APQ$ and $\triangle PQB$.

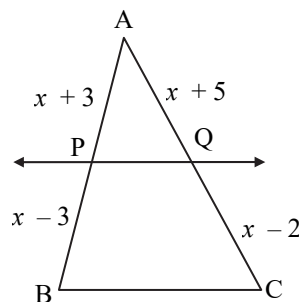
$$A(\triangle PQC) = A(\triangle \square)$$

...[Areas of two triangles having equal base and height are equal](iii)

$$\frac{A(\triangle APQ)}{A(\triangle PQB)} = \frac{A(\triangle \square)}{A(\triangle \square)} \dots[(\text{i}), (\text{ii}), \text{ and } (\text{iii})]$$

$$\frac{AP}{PB} = \frac{AQ}{QC} \dots[(\text{i}) \text{ and } (\text{ii})]$$

3. From fig., seg $PQ \parallel$ side BC , $AP = x + 3$, $PB = x - 3$, $AQ = x + 5$, $QC = x - 2$, then complete the activity to find the value of x .



In $\triangle PQB$, $PQ \parallel$ side BC

$$\frac{AP}{PB} = \frac{AQ}{QC} \dots [\square]$$

$$\frac{x+3}{x-3} = \frac{x+5}{\square}$$

$$(x+3) \square = (x+5)(x-3)$$

$$x^2 + x - \square = x^2 + 2x - 15$$

$$x = \square$$



Solution:

In ΔPQB , $PQ \parallel$ side BC

$$\frac{AP}{PB} = \frac{AQ}{QC} \quad \dots \text{[Basic proportionality theorem]}$$

$$\frac{x+3}{x-3} = \frac{x+5}{x-2}$$

$$\therefore (x+3)(x-2) = (x+5)(x-3)$$

$$\therefore x^2 + x - 6 = x^2 + 2x - 15$$

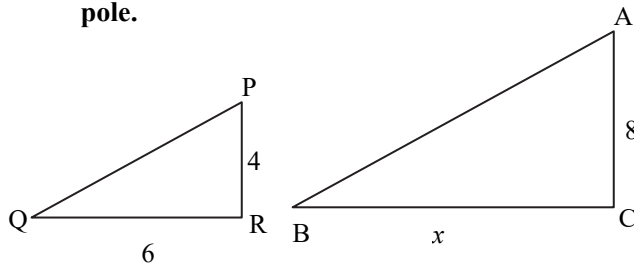
$$\therefore x - 6 = 2x - 15$$

$$\therefore 2x - x = 15 - 6$$

$$\therefore x = 9$$

Q.3. (B) [3 Marks]

1. There are two poles having heights 8m and 4m on plane ground as shown in fig. Because of sunlight shadows of smaller pole is 6m long, then find the length of shadow of longer pole.



Solution:

Here, AC and PR represents the bigger and smaller poles, and BC and QR represents their shadows respectively.

Now, $\Delta ACB \sim \Delta PRQ$

...[\because Vertical poles and their shadows form similar figures]

$$\therefore \frac{CB}{RQ} = \frac{AC}{PR}$$

...[Corresponding sides of similar triangles]

$$\therefore \frac{x}{6} = \frac{8}{4}$$

$$\therefore x = \frac{8 \times 6}{4}$$

$$\therefore x = 12 \text{ m}$$

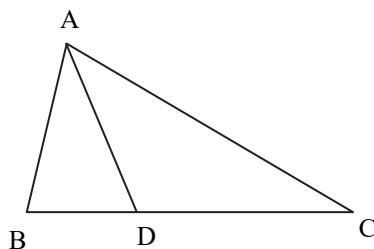
\therefore The shadow of the bigger pole will be 12 metres long at that time.

2. In ΔABC , $B-D-C$ and $BD = 7$, $BC = 20$, then find the following ratio.

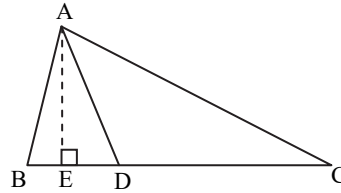
i. $\frac{A(\Delta ABD)}{A(\Delta ADC)}$

ii. $\frac{A(\Delta ABD)}{A(\Delta ABC)}$

iii. $\frac{A(\Delta ADC)}{A(\Delta ABC)}$



Solution:



Draw $AE \perp BC$, $B-E-C$.

$$BC = BD + DC \quad \dots \text{[B-D-C]}$$

$$\therefore 20 = 7 + DC$$

$$\therefore DC = 20 - 7 = 13$$

- i. ΔABD and ΔADC have same height AE .

$$\frac{A(\Delta ABD)}{A(\Delta ADC)} = \frac{BD}{DC}$$

...[Triangles having equal height]

$$\therefore \frac{A(\Delta ABD)}{A(\Delta ADC)} = \frac{7}{13}$$

- ii. ΔABD and ΔABC have same height AE .

$$\frac{A(\Delta ABD)}{A(\Delta ABC)} = \frac{BD}{BC}$$

...[Triangles having equal height]

$$\therefore \frac{A(\Delta ABD)}{A(\Delta ABC)} = \frac{7}{20}$$

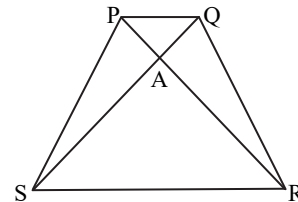
- iii. ΔADC and ΔABC have same height AE .

$$\frac{A(\Delta ADC)}{A(\Delta ABC)} = \frac{DC}{BC}$$

...[Triangles having equal height]

$$\therefore \frac{A(\Delta ADC)}{A(\Delta ABC)} = \frac{13}{20}$$

3. In given fig., quadrilateral PQRS, side $PQ \parallel$ side SR , $AR = 5 AP$, then prove that, $SR = 5PQ$



Proof:

side $PQ \parallel$ side SR and

seg SQ is their transversal. ...[Given]

$$\therefore \angle QSR \cong \angle SQP \quad \dots \text{[Alternate angles]}$$

$$\therefore \angle ASR \cong \angle AQP \quad \dots \text{(i) [Q-A-S]}$$

In ΔASR and ΔAQP ,

$$\angle ASR \cong \angle AQP \quad \dots \text{[From (i)]}$$

$$\angle SAR \cong \angle QAP \quad \dots \text{[Vertically opposite angles]}$$

$$\therefore \Delta ASR \sim \Delta AQP \quad \dots \text{[AA test of similarity]}$$

$$\therefore \frac{AR}{AP} = \frac{SR}{PQ}$$

... (ii) [Corresponding sides of similar triangles]



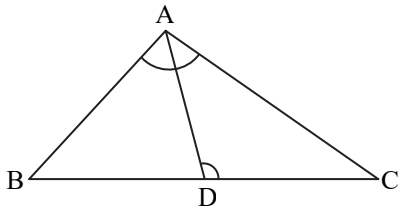
But, $AR = 5 AP$...[Given]

$$\therefore \frac{AR}{AP} = \frac{5}{1} \quad \dots\text{(iii)}$$

$$\therefore \frac{SR}{PQ} = \frac{5}{1} \quad \dots\text{[From (ii) and (iii)]}$$

$$\therefore SR = 5 PQ$$

4. In triangle ABC point D is on side BC (B-D-C) such that $\angle BAC = \angle ADC$ then prove that $CA^2 = CB \times CD$



Proof:

In $\triangle BAC$ and $\triangle ADC$,

$$\angle BAC \cong \angle ADC \quad \dots\text{[Given]}$$

$$\angle BCA \cong \angle ACD \quad \dots\text{[Common angle]}$$

$$\therefore \triangle BAC \sim \triangle ADC \quad \dots\text{[AA test of similarity]}$$

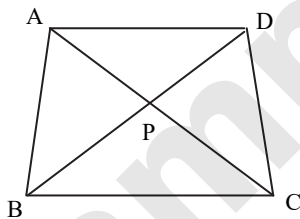
$$\therefore \frac{CA}{CD} = \frac{CB}{CA}$$

...[Corresponding sides of similar triangles]

$$\therefore CA \times CA = CB \times CD$$

$$\therefore CA^2 = CB \times CD$$

5. In Quadrilateral ABCD, side $AD \parallel BC$, diagonal AC and BD intersect in point P, then prove that $\frac{AP}{PD} = \frac{PC}{BP}$



Proof:

seg $AD \parallel$ seg BC and BD is their transversal. ...[Given]

$$\therefore \angle DBC \cong \angle BDA \quad \dots\text{[Alternate angles]}$$

$$\therefore \angle PBC \cong \angle PDA \quad \dots\text{(i)[D-P-B]}$$

In $\triangle PBC$ and $\triangle PDA$,

$$\angle PBC \cong \angle PDA \quad \dots\text{[From (i)]}$$

$$\angle BPC \cong \angle DPA$$

...[Vertically opposite angles]

$$\therefore \triangle PBC \sim \triangle PDA \quad \dots\text{[AA test of similarity]}$$

$$\therefore \frac{BP}{PD} = \frac{PC}{AP}$$

...[Corresponding sides of similar triangles]

$$\therefore \frac{AP}{PD} = \frac{PC}{BP} \quad \dots\text{[By alternendo]}$$

Q.4

[4 Marks]

1. Side of equilateral triangle PQR is 8 cm then find the area of triangle whose side is half of the side of triangle PQR.

Given: $\triangle PQR$ is an equilateral triangle with $PQ = QR = PR = 8\text{cm}$ and $\triangle ABC$ is an equilateral triangle with $AB = BC = AC = 4\text{cm}$

To find: $A(\triangle ABC)$

Construction:

Draw seg $AD \perp BC$; B-D-C

Solution:

In $\triangle ABD$,

$$\angle ADB = 90^\circ$$

...[construction]

$$\angle ABD = 60^\circ$$

...[Angle of an equilateral triangle]

$$\angle BAD = 30^\circ \quad \dots\text{[Remaining angle of a triangle]}$$

$\therefore \triangle ABD$ is a $30^\circ - 60^\circ - 90^\circ$ triangle.

$$\therefore AD = \frac{\sqrt{3}}{2} AB \quad \dots\text{[side opposite to } 60^\circ]$$

$$= \frac{\sqrt{3}}{2} \times 4 = 2\sqrt{3} \quad \dots\text{(i)}$$

$$\text{Area of triangle} = \frac{1}{2} \times \text{base} \times \text{height}$$

$$\therefore \text{Area of } \triangle ABC = \frac{1}{2} \times AD \times BC$$

$$= \frac{1}{2} \times 2\sqrt{3} \times 4$$

$$= 2 \times 2\sqrt{3}$$

$$= 4\sqrt{3} \quad \dots\text{[From (i)]}$$

\therefore Area of the triangle whose side is half of the side of $\triangle PQR$ is $4\sqrt{3}$ sq.cm.

2. Areas of two similar triangles are equal then prove that triangles are congruent.

Given: $\triangle ABC \sim \triangle PQR$ and $A(\triangle ABC) = A(\triangle PQR)$

To prove: $\triangle ABC \cong \triangle PQR$

Proof:

$$\frac{A(\triangle ABC)}{A(\triangle PQR)} = 1 \quad \dots\text{(i) [Given]}$$

$$\text{Also, } \frac{A(\triangle ABC)}{A(\triangle PQR)} = \frac{AB^2}{PQ^2} = \frac{BC^2}{QR^2} = \frac{AC^2}{PR^2}$$

...[Theorem of areas of similar triangles]

$$\therefore 1 = \frac{AB^2}{PQ^2} = \frac{BC^2}{QR^2} = \frac{AC^2}{PR^2} \quad \dots\text{[From (i)]}$$

$$\therefore 1 = \frac{AB^2}{PQ^2}$$

$$\therefore AB^2 = PQ^2$$

$$\therefore AB = PQ \quad \dots\text{[Taking square root of both sides]}$$

i.e., seg $AB \cong$ seg PQ

Similarly, seg $BC \cong$ seg QR

and seg $AC \cong$ seg PR

$$\therefore \triangle ABC \cong \triangle PQR \quad \dots\text{[SSS test of congruency]}$$



3. Two triangles are similar. Smaller triangle's sides are 4 cm, 5 cm, 6 cm. Perimeter of larger triangle is 90 cm then find the sides of larger triangle.

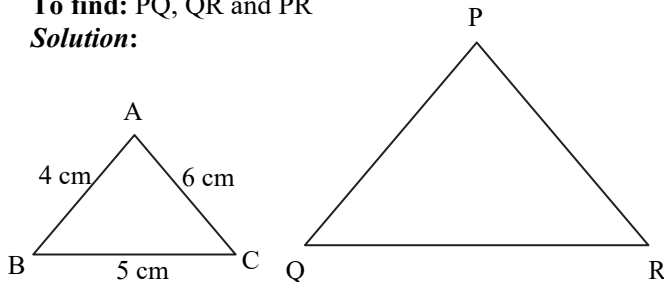
Given: $\triangle ABC \sim \triangle PQR$

In $\triangle ABC$, $AB = 4\text{cm}$, $BC = 5\text{cm}$, $AC = 6\text{cm}$

In $\triangle PQR$, $PQ + QR + PR = 90\text{cm}$

To find: PQ , QR and PR

Solution:



$\triangle ABC \sim \triangle PQR$...[Given]

$$\therefore \frac{AB}{PQ} = \frac{BC}{QR} = \frac{AC}{PR}$$

...[Corresponding sides of similar triangles]

Let $\frac{AB}{PQ} = \frac{BC}{QR} = \frac{AC}{PR} = k$

$$\therefore \frac{4}{PQ} = \frac{5}{QR} = \frac{6}{PR} = k \quad \dots[\text{Given}]$$

$$\therefore \frac{4}{PQ} = k, \frac{5}{QR} = k \text{ and } \frac{6}{PR} = k$$

$$\therefore PQ = \frac{4}{k}, QR = \frac{5}{k} \text{ and } PR = \frac{6}{k} \quad \dots(\text{i})$$

$$\therefore PQ + QR + PR = \frac{4}{k} + \frac{5}{k} + \frac{6}{k}$$

$$\therefore 90 = \frac{15}{k} \quad \dots[\text{Given}]$$

$$\therefore k = \frac{15}{90} = \frac{1}{6}$$

$$\therefore PQ = \frac{4}{\left(\frac{1}{6}\right)} = 4 \times 6 = 24\text{cm} \quad \dots[\text{From (i)}]$$

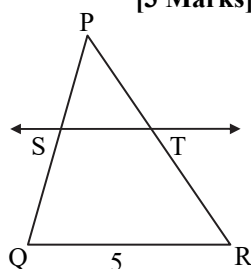
$$QR = \frac{5}{\left(\frac{1}{6}\right)} = 5 \times 6 = 30\text{cm} \quad \dots[\text{From (i)}]$$

$$PR = \frac{6}{\left(\frac{1}{6}\right)} = 6 \times 6 = 36\text{cm} \quad \dots[\text{From (i)}]$$

\therefore The sides of the larger triangle are 24cm, 30cm and 36cm.

Q.5 [3 Marks]

1. In fig., $PS = 2$, $SQ = 6$, $QR = 5$, $PT = x$ and $TR = y$. Then find the pair of value of x and y such that $ST \parallel$ side QR .



Solution:

In $\triangle PQR$,

line $ST \parallel$ side QR ...[Given]

$$\therefore \frac{PS}{SQ} = \frac{PT}{TR} \quad \dots[\text{Basic proportionality theorem}]$$

$$\therefore \frac{2}{6} = \frac{PT}{TR} \quad \dots[\text{Given}]$$

$$\therefore \frac{1}{3} = \frac{x}{y}$$

$$\therefore y = 3x \quad \dots(\text{i})$$

$$PR = PT + TR \quad \dots[\text{P-T-R}]$$

$$\therefore PR = x + y \quad \dots(\text{ii})[\text{Given}]$$

In $\triangle PQR$, $PQ + QR > PR$

... $\left[\begin{array}{l} \text{The sum of the lengths of} \\ \text{any two sides of a triangle is} \\ \text{greater than the third side} \end{array} \right]$

$$\therefore (PS + SQ) + QR > PR \quad \dots[\text{P-S-Q}]$$

$$\therefore 2 + 6 + 5 > PR \quad \dots[\text{Given}]$$

$$\therefore 13 > PR$$

$$\therefore x + y < 13 \quad \dots[\text{From (ii)}]$$

$$\therefore x + 3x < 13 \quad \dots[\text{From (i)}]$$

$$\therefore 4x < 13 \quad \dots(\text{ii})$$

\therefore Integer values of x satisfying equation (ii) are 1, 2, 3.

$$\therefore \left. \begin{array}{l} \text{If } x = 1, \text{ we get } y = 3x = 3 \\ \text{If } x = 2, \text{ we get } y = 3x = 6 \\ \text{If } x = 3, \text{ we get } y = 3x = 9 \end{array} \right\} \dots[\text{From (i)}]$$

\therefore Some of the pairs of values of x and y are (1, 3), (2, 6), (3, 9).

2. An architecture have model of building. Length of building is 1m then length of model is 0.75cm. Then find length and height of model building whose actual length is 22.5m and height is 10m.

Solution:

Note that the dimensions of the actual building and the dimensions of the model must be in same proportion.

$$\therefore \frac{\text{Length of building}}{\text{Length of model building}} = \frac{\text{Height of building}}{\text{Height of model building}} = \frac{1}{0.75} \quad \dots[\text{Given}]$$

$$\therefore \frac{22.5}{\text{Length of model building}} = \frac{10}{0.75} \quad \dots[\text{Given}]$$

$$\therefore \frac{22.5}{\text{Length of model building}} = \frac{1}{0.75}$$

$$\therefore \text{Length of the model building} = 22.5 \times 0.75 = 16.875\text{m}$$

$$\text{Also, } \frac{10}{\text{Height of model building}} = \frac{1}{0.75}$$

$$\therefore \text{Height of the model building} = 10 \times 0.75 = 7.5\text{ m}$$

\therefore Length and height of the model building are 16.875m and 7.5m respectively.

Q.1.
(A)

Choose the correct option

Note: The $\text{\textcircled{R}}$ marked questions are the part of reduced/non-evaluative portion for academic year 2020-21 only.

- Transfer of information from molecules of DNA to mRNA is called _____ process.
(A) translocation (B) translation
(C) transcription (D) differentiation
- Similarities in initial stages indicate the _____ evidence.
(A) Connecting links (B) Anatomical
(C) Embryological (D) Palaeontological
- _____ is a vestigial organ in human beings.
(A) Wisdom teeth (B) Ear muscles
(C) Body hairs (D) All of the above
- Protein located in bones is _____.
(A) myosin (B) melanin
(C) haemoglobin (D) ossein
- Which of the following vitamins is necessary for synthesis of NADH_2 ?
(A) Vitamin B_3 (B) Vitamin C
(C) Vitamin B_2 (D) Vitamin K
- _____ cells divide by mitosis.
(A) Somatic
(B) Gametes
(C) Stem
(D) Both (A) and (C)
- The first step of karyokinesis is _____.
(A) anaphase (B) telophase
(C) metaphase (D) prophase
- _____ is not a part of mitosis.
(A) Anaphase (B) Diplotene
(C) Prophase (D) Cytokinesis
- We get _____ energy from lipids.
(A) 4 cal / gm (B) 9 cal/ gm
(C) 9 kcal/ gm (D) 4 kcal/gm
- In humans, there are _____ pairs of chromosomes.
(A) 22 (B) 23
(C) 44 (D) 46
- Which of the following is not a type of asexual reproduction in multicellular organisms?
(A) Fragmentation (B) Regeneration
(C) Budding (D) Binary fission
- Find the odd one out:
(A) Stigma (B) Anther
(C) Style (D) Ovary
- At the time of birth, there are _____ oocytes in the ovary of a female foetus.
(A) 1 to 2 million (B) 2 to 3 million
(C) 2 to 4 million (D) none of these
- _____ modern remedial technique is used if there is a problem in implantation of embryo in the uterus.
(A) Surrogacy (B) Sperm bank
(C) *In vitro* fertilization (D) none of these
- Implantation of the embryo occurs in _____.
(A) uterus (B) ovary
(C) oviduct (D) vagina
- In humans, sperm production occurs in the organ _____.
(A) testes (B) scrotum
(C) prostate gland (D) ovaries
- Pregnant mother supplies nourishment to her foetus through _____.
(A) uterus (B) placenta
(C) ovary (D) oviduct
- _____ twins are formed from a single embryo.
(A) Dizygotic (B) Monozygotic
(C) Multiple zygote (D) Zygote
- Pollen grains are formed by _____ division in locules of anthers.
(A) meiosis (B) mitosis
(C) amitosis (D) binary
- Asexual reproduction occurs by _____ cell division.
(A) mitotic
(B) meiotic
(C) fertilization
(D) double fertilization
- This method of asexual reproduction is seen in *Paramecium*.
(A) Transverse binary fission
(B) Longitudinal binary fission
(C) Simple binary fission
(D) Regeneration
- In meiosis, the number of chromosomes becomes _____.
(A) multiple times (B) triple
(C) half (D) double
- Generally, every month, _____ ovum is released in the abdominal cavity alternately from each ovary.
(A) 1 (B) 2 (C) 3 (D) 4



24. _____ is present in unisexual flower.
(A) Both androecium and gynoecium
(B) Only androecium
(C) Only gynoecium
(D) Androecium or gynoecium
25. _____ is a chemical factor of abiotic components.
(A) Air (B) water
(C) Nutrients (D) sunlight
26. _____ is an organic compound of abiotic components.
(A) Protein (B) Iron
(C) Sodium (D) Oxygen
27. _____ is a rare species.
(A) Lesser florican (B) Tiger
(C) Giant squirrel (D) Musk deer
28. _____ is an indeterminate species.
(A) Red panda
(B) Lion
(C) Lion tailed monkey
(D) Giant squirrel
29. Occurrence of diversity among the organisms of the same species is called _____ diversity.
(A) species (B) genetic
(C) ecosystem (D) animal
30. In modern civilization, _____ has become a primary need
(A) food (B) cloth
(C) shelter (D) energy
31. Most electric power plants are based on the principle of _____.
(A) electro induction
(B) magnetic induction
(C) electro-magnetic induction
(D) electromagnet
32. Principle of Electromagnetic induction was invented by the scientist _____.
(A) Ohm (B) Michael Faraday
(C) Joule (D) Newton
33. In the power plant based on nuclear energy _____ is used to rotate the generator.
(A) Steam turbine (B) air turbine
(C) water turbine (D) none of these
34. When a neutron is bombarded on an atom of uranium, _____ neutrons are generated in this process.
(A) 1 (B) 2 (C) 3 (D) 4
35. Kinetic energy in flowing water drives _____ to generate electricity.
(A) watermill (B) windmill
(C) turbines (D) generator
36. Wind turbines with capacity _____ are commercially available.
(A) 1 kW to 7 MW (B) 1 kW to 7 kW
(C) 1 kW to 7000 W (D) 1 W to 7 MW
37. Solar photovoltaic cells convert the solar radiation energy directly into _____ energy.
(A) electrical (B) potential
(C) kinetic (D) heat
38. A silicon solar cell of dimension 1 sq.cm. generates current of about _____.
(A) 50 mA (B) 30 mA
(C) 50 A (D) 30 A
39. A silicon solar cell of dimension 1 sq.cm. generates _____ potential difference.
(A) 0.1 V (B) 0.5 V
(C) 0.1 mV (D) 0.5 Mv
40. In nuclear power plants, neutrons are bombarded on atoms of _____.
(A) Uranium-236. (B) Barium
(C) Krypton. (D) Uranium -235.
41. My body is soft and slimy, hence I am referred as _____.
(A) Mollusca (B) Echinodermata
(C) Annelida (D) Arthropoda
42. Which of the following is a hermaphrodite animal?
(A) *Doliolum* (B) Scorpion
(C) Centipede (D) Cockroach
43. Which of the following animals can regenerate its broken body parts?
(A) Frog (B) Starfish
(C) Sparrow (D) Pigeon
44. Which of the following is a warm blooded (homeotherm) animal?
(A) Bat (B) Tortoise
(C) Wall lizard (D) Crocodile
45. My body is _____ shaped to minimize water resistance.
(A) pointed (B) spindle
(C) cartilaginous (D) flat
46. _____ is called a friend of farmers.
(A) Rabbit (B) Cat
(C) Leech (D) Earthworm
47. Which of the following animals has a hard calcareous shell?
(A) Nereis (B) Shark
(C) Bivalve (D) Herdmania
48. _____ acid is used in production of vitamins.
(A) Citric (B) Gluconic
(C) Lactic (D) Itaconic



49. Nowadays, _____ are used for treatment of diarrhoea and treatment of poultry also.
 (A) yoghurt (B) probiotics
 (C) vinegar (D) cheese
50. Yoghurt is a milk product produced with the help of _____.
 (A) *Lactobacilli* (B) *Azotobacter*
 (C) *Corynebacterium* (D) *Streptococcus*.
51. _____ is a powerful antibiotic against treatment of tuberculosis.
 (A) Penicillin (B) Rifamycin
 (C) Streptomycin (D) Bacitracin.
52. _____ is used in the commercial bakery industry.
 (A) Compressed yeast (B) Algae
 (C) Bacteria (D) Microbes
53. _____ is a substance obtained by microbial processing that functions as artificial sweetener.
 (A) Nycin (B) Lysine
 (C) Xanthenes (D) Xylitol
54. At the earliest stage of development, the organism is in the form of a mass of a cell, which are almost alike, those cells are called _____.
 (A) stem cells (B) RBC
 (C) WBC (D) none of these
55. Which of the following factors are considered or need to be paid attention during organ transplantation?
 (A) Blood group of recipient
 (B) Diseases of donor
 (C) Age of donor
 (D) All of the above
56. Availability of _____ is an important requirement in organ transplantation.
 (A) doctor (B) clinic
 (C) donor (D) ambulance
57. The disease related with the synthesis of insulin is _____.
 (A) cancer (B) arthritis
 (C) heart disease (D) diabetes
58. Transgenic raw potatoes generate the immunity against _____ disease.
 (A) plague (B) cholera
 (C) leprosy (D) TB
59. _____ have valuable contributions in the green revolution in the USA.
 (A) Dr. Norman Borlaug
 (B) Dr. Swaminathan
 (C) Dr. Verghese Kurien
 (D) Dr. Har Govind Khorana
60. Methods like artificial insemination and embryo transplant are mainly used for _____.
 (A) animal husbandry (B) wild life
 (C) pet animals (D) infertile women
61. _____ is the revolutionary event in biotechnology after cloning.
 (A) Human genome project
 (B) DNA discovery
 (C) Stem cell research
 (D) All of the above
62. Biotechnology integrated the toxin which is fatal for _____, was produced in leaves and bolls of cotton.
 (A) bollworm (B) caterpillar
 (C) sparrow (D) frog
63. Cell _____ starts from 14th day of conception.
 (A) growth (B) differentiation
 (C) development (D) division
64. The Government of India has encouraged _____ for improving the productivity by launching the program NKM-16.
 (A) aquaculture (B) poultry
 (C) piggery (D) apiculture
65. _____ are present in the umbilical cord by which the foetus is joined to the uterus of the mother.
 (A) Stem cells (B) Muscle cells
 (C) Neuron cells (D) Bone cells
66. For the purpose of preservation stem cell samples are kept in _____.
 (A) liquid oxygen (B) hydrogen
 (C) liquid chlorine (D) liquid nitrogen
67. Phenylketonuria arises due to genetic changes in _____ cells.
 (A) liver (B) intestine
 (C) pancreas (D) heart
68. _____ organism is used as biofertilizers.
 (A) *Thiobacillus* (B) *Nostoc*
 (C) *Saccharomyces* (D) *Escherichia*
69. Alcohol consumption mainly affects the _____ system.
 (A) nervous (B) excretory
 (C) respiratory (D) digestive
70. Laughter club is a remedy to drive away _____.
 (A) addictions (B) stress
 (C) lethargy (D) epidemics
71. _____ helps to improve concentration in the studies.
 (A) Hobbies (B) Sports
 (C) Meditation (D) Eatables



72. _____ influence is stronger in case of adolescents.
(A) Teachers (B) Fathers
(C) Relatives (D) Peer group
73. Our _____ has been changed to some extent in the age of technology.
(A) lifestyle (B) habit
(C) circumstance (D) passion
74. Hobbies like _____ pet animals help to create a positive mindset.
(A) feeding (B) transferring
(C) rearing (D) looking
75. Continuous consumption of _____ substances causes carcinogenic effects especially on the mouth and lung.
(A) hot (B) sweet
(C) spicy (D) tobacco like
76. Alcoholic person lacks the _____ thinking.
(A) straight (B) rational
(C) universal (D) spiritual
77. _____ may arise due to excessive use of mobile phones.
(A) Headache
(B) Problem in vision
(C) Joint pains
(D) All of the above
78. Liquor is produced from _____.
(A) alcohol (B) glucose
(C) acid (D) salt
79. Salaam Mumbai Foundation runs programs for _____ in a slum area.
(A) education
(B) tobacco
(C) cybercrimes
(D) domestic violence
65. (A) 66. (D) 67. (A) 68. (B)
69. (A) 70. (B) 71. (C) 72. (D)
73. (A) 74. (C) 75. (D) 76. (B)
77. (D) 78. (A) 79. (A)

[Note: 55. The question has been modified as per the information provided in the textbook.

79. Salaam Mumbai Foundation organization runs programs in various schools in Mumbai to empower the children living in slum area in the field of education, sports, arts and business. It has made some districts in Maharashtra completely tobacco-free.]

Answers:

1. (C) 2. (C) 3. (D) 4. (D)
5. (A) 6. (D) 7. (D) 8. (B)
9. (C) 10. (B) 11. (D) 12. (B)
13. (C) 14. (A) 15. (A) 16. (A)
17. (B) 18. (B) 19. (A) 20. (A)
21. (A) 22. (C) 23. (A) 24. (D)
25. (C) 26. (A) 27. (D) 28. (D)
29. (B) 30. (D) 31. (C) 32. (B)
33. (A) 34. (C) 35. (C) 36. (A)
37. (A) 38. (B) 39. (B) 40. (D)
41. (A) 42. (A) 43. (B) 44. (A)
45. (B) 46. (D) 47. (C) 48. (C)
49. (B) 50. (A) 51. (B) 52. (A)
53. (D) 54. (A) 55. (D) 56. (C)
57. (D) 58. (B) 59. (A) 60. (A)
61. (C) 62. (A) 63. (B) 64. (A)



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