



Brilliant Academic Council

Final Term Assessment – 2018-19

Class - VII

Subject – Mathematics

Time: 2:30 Hrs.

Date: 27.02.2019

M.M. 80

Wednesday

General instructions

- All questions are **compulsory**
- The question paper consists of **30** questions divided into four **sections-A, B, C and D**. **Section-A** comprises of **6** questions of **1mark** each, **section-B** comprises of **6** questions of **2** marks each, **Section-C** comprises of **10** questions of **3** marks each, **Section-D** comprises of **8** questions of **4** marks each.
- There is no overall choice in this question paper
- Use of calculator is not permitted.

SECTION-A (1 mark each)

Q.1 Write any two criteria for congruence of triangles.

Q.2 Convert $\frac{1}{8}$ into percent.

Q.3 Find the area of a triangle whose base is 5cm and altitude is 4.8cm.

Q.4 Write an equation for "Number 5 added to three times the product of numbers m and n ."

Q.5 Find the value of $(-2)^4$.

Q.6 Find the mean of first 5 prime numbers.

SECTION-B (2 mark each)

Q.1 The enrolment in a school during six consecutive years was as follows:

1555, 1670, 1750, 2013, 2540 and 2820 find the mean enrolment.

Q.2 Solve the equation $5p + 2 = 17$ by trial and error method.

Q.3 If $\triangle DEF \cong \triangle BCA$, write the parts of $\triangle BCA$ that corresponds to

- i. $\angle E$ ii. EF iii. DF iv. $\angle F$

Q.4 Find the whole quantity whose 12% is 1080.

Q.5 Express 432 as a product of powers of their prime factors.

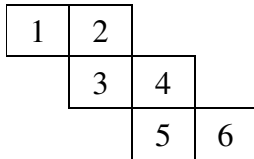
Q.6 What should be added to $x^2 + xy + y^2$ to get $2x^2 + 3xy$?

SECTION-C (3 mark each)

Q.1 Simplify the expression $4(2x - 1) + 3x + 11$ and find its value for $x = 2$.

Q.2 Simplify i. $(-3)^2 \times (-5)^2$ ii. $(-2)^3 \times (-10)^2$

Q.3 Can this be a net for a die? Explain your answer.



Q.4 The perimeter of a rectangle is 130cm. If the breadth of rectangle is 30cm, find its length. Also find the area of a rectangle.

OR

The area of a rectangular sheet is 500 cm^2 . If the length of the sheet is 25cm, what is its width? Also find the perimeter of the rectangular sheet.

Q.5 If Manohar pays an interest of Rs. 750 for 2 years on a sum of Rs 4,500, find the rate of interest.

OR

Juhi sells a washing machine for Rs. 13,500. She loses 20% in the bargain. What was the price at which she bought it?

Q.6 Construct a triangle XYZ in which $XY=4.5\text{cm}$, $YZ=5\text{cm}$ and $ZX=6\text{cm}$.

Q.7 The scores in mathematics test (out of 25) of 15 students is as follows:

19, 25, 23, 20, 09, 20, 15, 10, 05, 16, 25, 20, 24, 12, 20

Find the mode and median of this data.

Q.8 Add $x^2 - 4x^2y + 6xy^2$ to the sum $2x^2y - 3xy^2 + 2y^2$ and $y^2 + 3x^2y + 4xy^2$

OR

What should be taken away from $3x^2 - 4y^2 + 5xy + 20$ to obtain $-x^2 - y^2 + 6xy + 20$.

Q.9 If $\triangle ABC \cong \triangle FED$ under the correspondence $ABC \leftrightarrow FED$, write all the corresponding congruent parts of the triangles.

OR

Solve the following equations:

i. $4 + 5(p - 1) = 34$

ii. $\frac{2b}{3} - 5 = 3$

Q.10 Convert the following equations in statement form:

i) $x - 5 = 9$,

ii) $5p = 20$,

iii) $3n + 7 = 1$

SECTION-D (4 mark each)

Q.1 Construct a $\triangle PQR$ if $PQ=5\text{cm}$, $m\angle PQR = 105^\circ$ and $m\angle QRP = 40^\circ$.

OR

Construct an isosceles right angled triangle ABC , where $m\angle ACB = 90^\circ$ and $AC=6\text{cm}$.

Q.2 The performance of a student in 1st term and 2nd term (out of 100) is given. Draw a double bar graph choosing appropriate scale and answer the following:

Subject	English	Hindi	Maths	Science	S. Science
1 st term	67	72	88	81	73
2 nd term	70	65	95	85	75

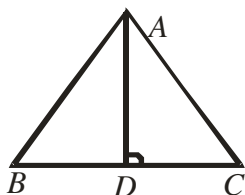
- In which subject, has the child improved his performance the most?
- In which subject, is the improvement the least?

Q.3 Solve the following:

- i. The teacher tells the class that the highest marks obtained by a student in her class is twice the lowest marks plus 7. The highest score is 87. Find the lowest score.
- ii. Sachin scored twice as many runs as Rahul. Together, their runs fell two short of a double century. How many runs did each one score?

Q.4 ABC is an isosceles triangle with $AB=AC$ and AD is one of its altitude.

- i. State the three pairs of equal parts in $\triangle ADB$ and $\triangle ADC$.
- ii. Is $\triangle ADB \cong \triangle ADC$? Why or why not?
- iii. Is $\angle B = \angle C$? Why or why not?
- iv. Is $BD=CD$? Why or why not?



- Q.5 i. Chalk contains calcium, carbon and oxygen in the ratio 10:3:12. Find the percentage of carbon in chalk.
- ii. If in a stick of chalk, carbon is 3g, what is the weight of the chalk stick?

Q.6 From the sum of $4 + 3x$ and $5 - 4x + 2x^2$, subtract the sum of $3x^2 - 5x$ and $-x^2 + 2x + 5$.

OR

The height of 10 girls were measured in cm and the results are as follows:

135,150,139,128,151,132,146,149,143,141

- i. What is the height of the tallest and the shortest girl?
- ii. What is the range of the data?
- iii. What is the mean height of the girls?
- iv. How many girls have heights more than the mean height?

Q.7 Simplify

i. $\frac{12^4 \times 9^3 \times 4}{6^3 \times 8^2 \times 27}$

ii. $\frac{2 \times 3^4 \times 2^5}{9 \times 4^2}$

OR

A path 5m wide runs along inside a square park of side 100m. Find the area of the path. Also find the cost of cementing it at the rate of Rs. 250 per sq. Metre.

Q.8 What cross section do you get when you give a (i) *vertical cut* (ii) *horizontal cut* to the following solids:

- a. A brick
- b. A die
- c. A circular pipe
- d. An ice cream cone.

=== 0 0 0 ===