ST. XAVIER'S SENIOR SECONDARY SCHOOL, DELHI – 110054
Summative Assessment II in **MATHEMATICS – Std. 9** M. Marks : 90
3-3-2015 Time : 3 hrs.

Roll No: | | |

Total printed pages :	04
Total printed questions :	31

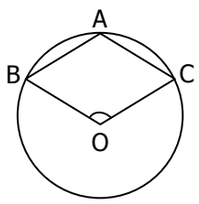
General Instructions:
i) Attempt all the questions.
ii) This question paper consists of 31 questions divided into five sections A, B, C,D and E. Section A comprises of 4 questions of 1 mark each, Section B comprises of 5 questions of 2 marks each, Section C comprises of 10 questions of 3 marks each, Section D comprises of 9 questions of 4 each and Section E comprises of 1 question of 2 marks and 2 questions of 4 marks. This section is based on OTBA.

SECTION – A (1 x 4 = 4 marks)

1. A dice is thrown at random. What is the probability of getting a multiple of 3?

2. Find the value of k if, (3, 2) is the solution of the equation $3x - ky = 5$.

3. In the given fig. $\angle BOC = 100°$. Find the measure of $\angle BAC$.



4. The total surface area of a cube is 96 cm^2. Then find the length of its edge.

SECTION – B (2 x 5 = 10 marks)

5. Write the linear equation $5y + 6 - 2x = 9$ in standard form and hence write the values of a, b and c.

6. The area of a parallelogram is 288cm^2. If its altitude is twice the corresponding base, determine the base and altitude.

7. Write two solutions of the equation $2y + 3 = 3y - 5$ and check if $(-8, -8)$ is its solution.

8. Find the volume of a metallic sphere whose radius is 7cm.

9. An equilateral triangle ABC is inscribed in a circle with centre O. Find the measure of $\angle BOC$.

SECTION – C (3 x 10 = 30 marks)

10. Perimeter of a rectangle is 20 m. Write this information in the form of a linear equation in two variables and represent it graphically by taking length on x-axis and breadth on y-axis.

11. Prove that equal chords of a circle subtend equal angles at the centre.

12. A right triangle of height 24cm and hypotenuse 25cm is revolved about its height. Find the volume of the solid thus generated.

13. If the non-parallel sides of a trapezium are equal then prove that it is cyclic.

14. Construct ΔPQR in which QR = 6.2cm, $\angle Q = 60°$ and PR – PQ = 3cm.

15. A school provides milk to the students daily in cylindrical glasses of diameter 7cm. If the glass is filled with milk up to a height of 12cm. How many litres of milk is required to serve 1000 students?

16. Given below is the frequency distribution of salary of 80 workers in a factory:

Salary (Rs.)	1000 - 2000	2000 - 3000	3000 - 4000	4000 - 5000
No. of workers	12	18	22	28

If a worker is selected at random, find the probability that his salary is –
i) less than 3000.
ii) more than or equal to 1000.
iii) more than or equal to 2000 but less than 4000.

17. PQRS is a rectangle. A, B, C and D are the mid points of the sides PQ, QR, RS and PS respectively. Show that the quadrilateral ABCD is a parallelogram.

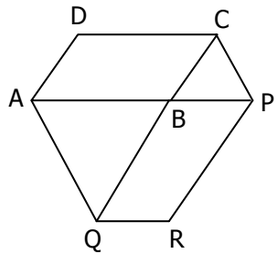
18. Diagonals AC and BD of a quadrilateral ABCD intersect at O in such a way that ar(AOD) = ar(BOC). Prove that ABCD is a trapezium.

19. Tarpaulin cloth having an area of $2200m^2$ is shaped into the form of a conical tent of radius 14m.
    i) Find the slant height of this conical tent.
    ii) Find the volume of tent.

SECTION – D (4 x 9 = 36 marks)

20. Prove that the angle subtended by an arc at the centre is double the angle subtended by it at any point on the remaining part of the circle.

21. The side AB of a parallelogram ABCD is produced to any point P. A line through A and parallel to CP meets CB produced at Q and then parallelogram PBQR is completed.
Show that ar(ABCD) = ar(PBQR).



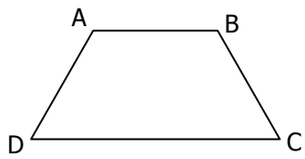
22. 30 plants were planted in each of the 12 schools. After a month the number of plants that survived are given below:

School	1	2	3	4	5	6	7	8	9	10	11	12
No. of plants survived	22	15	12	24	27	10	13	22	17	9	20	25

What is the probability of selecting a school with survival of :
    i) More than 20 plants in a school.
    ii) At least 20 plants in a school.
    iii) How can such steps in the school be helpful for the society?

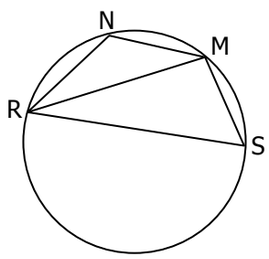
23. The radius and height of a cone are in the ratio 3:4 and its volume is $301.44cm^3$. Find the radius and slant height of the cone? (Use $\pi = 3.14$)

24. ABCD is a trapezium in which AB||CD and AD = BC.
Show that :
    i) $\angle A = \angle B$
    ii) $\angle C = \angle D$



25. The number of girls enrolled in a village school last year providing free elementary education became 3 less than twice this year. Taking the previous year enrollment as x and current enrollment as y, form a linear equation in two variables. Write the equation in standard form and draw the graph.
From the graph read how many girls were enrolled previous year if present enrollment is 11.

26. In the given fig. RS is the diameter of the circle, points N and M lie on the circle. NM is parallel to RS and $\angle MRS = 29°$.
Find $\angle RNM$ and $\angle NRS$.



27. Prove that parallelograms on the same base and between the same parallels are equal in area.

28. Shade the triangle formed by the graphs of linear equations $2x - y = 4$, $x + y = 2$ and Y-axis. Write the coordinates of vertices of this triangle.

SECTION – E (OTBA)

1. Theme: Atithidevo Bhavah

Abstract:
Atithidevo Bhavah is a verse in Sanskrit. It means to consider the guest as god. This statement is drawn from an ancient scripture which has been the ethos of Indian culture. Recently, this verse has found its place in the tagline of Ministry of Tourism in order to improve the treatment of the foreign tourists visiting the country due to the popularity the country has gained in the recent times as a popular and favorite tourist destination.

The concept of Atithidevo bhav is deep rooted in our Indian culture and is carried forward with same spirit as it used to in ancient times. The text gives an insight into the number of foreign tourists arrivals in India during different seasons which is supported with data. The concept also gets reinforced when the statistics show that tourists of all age groups from across the globe love to visit India.

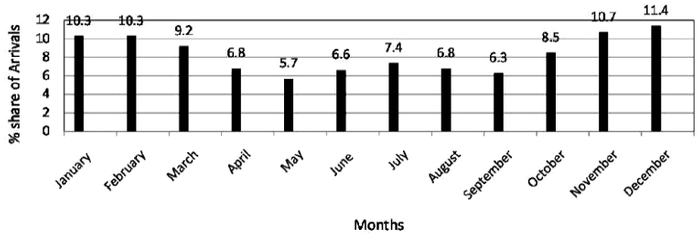
India is a beautiful country rich in diversity. The majestic Himalayas, the sparkling ocean, the dry desert, the dancing river, the enticing lagoons or the magical back waters, all appeal to nature lovers. People come from far off countries to a new beautiful vision of glory of nature. Its rich history, cultural and geographical diversity makes it an international tourism attraction. There are many places which attract the interest of the tourists in India. Many foreign tourists from different parts of the world come to explore the natural and the heritage beauty of this Nation. Tourists come for different purposes such as weddings, shopping, tourism, business, education, adventure, family reunions, etc.

Seasonality in Foreign Tourist Arrivals in India

India experiences three major seasons - Winter, Summer and Monsoon.
In 2011 over six lakh tourists had visited various tourist destinations such as Agra, Jaipur, Udaipur, Kashmir valley, Goa, Mysore and Thiruvananthapuram in the winter season.
In 2012, the minimum number of foreign tourists visited India during the month of May and maximum during the months of December.

The following graph clearly shows that the highest FTAs in India were in October-December and January-March during 2012.

Figure-1
Month - wise Percentage share of Foreign Tourist Arrivals in India, 2012



India is ranked as the 38th country in the world in terms of foreign tourist arrivals. The most represented countries are the United Kingdom and the United States. In 2012 Maharashtra, Tamil Nadu and Delhi were the most popular states for foreign tourists. Domestic tourists visited the states of Uttar Pradesh, Andhra Pradesh and Tamil Nadu most frequently.

Delhi, Mumbai, Chennai and Agra have been the four most visited cities of India by foreign tourists during the year 2012. Worldwide, Chennai is ranked 41 by the number of foreign tourists, while Delhi is ranked at 50, Mumbai at 57, Agra at 65 and Kolkata at 99.

STATISTICS, SURVEYS AND STUDIES

Foreign Tourist Arrivals and Foreign Exchange Earnings during the years 2000-2011

Year	Foreign Tourist Arrivals (in nos.)	Percentage Change Over Previous Year	Foreign Exchange Earnings (Rs. Crore)	Percentage Change Over Previous Year	Foreign Exchange Earnings (Million US$)	Percentage Change Over Previous Year
2000	2649378	6.7	15626	20.6	3460	15.0
2001	2537282	-4.2	15083	-3.5	3198	(-)7.6
2002	2384364	-6.0	15064	-0.1	3103	(-)3.0
2003	2726214	14.3	20729	37.6	4463	43.8
2004	3457477	26.8	27944	34.8	6170	38.2
2005	3918610	13.3	33123	18.5	7493	21.4
2006	4447167	13.5	39025	17.8	8634	15.2
2007	5081504	14.3	44360	13.7	10729	24.3
2008	5282603	4.0	51294*	15.6	11832*	10.3
2009	5167699	-2.2	54960 #	7.1	11394 #	(-) 3.7
2010	5775692	11.8	64889 #	18.1	14193 #	24.6
2011	6290319	8.9	77591 #	19.6	16564 #	16.7

Advance Estimates * Revised Estimates

Table–1: Annual Report 2011-12, Ministry of Tourism, Government of India

Ideal Wonders of India

Taj Mahal (also "the Taj"), built by the Mughal emperor Shah Jahan in memory of his queen Mumtaz Mahal is the pinnacle of Mughal architecture.

The Harmandir Sahib (The abode of God) **Golden Temple**

Tawang Monestry located at Tawang in Arunachal Pradesh was founded by Merak Lama Lodre Gyatso in the year 1680-81. The name Tawang means Chosen Horse.

Foreign Tourists Arrivals (FTAs) in India

It can be observed clearly that the FTAs in India have been increasing from all regions during the year 2012. The growth was maximum from Eastern Europe followed by Africa, East Asia, Australia, Central and South America.

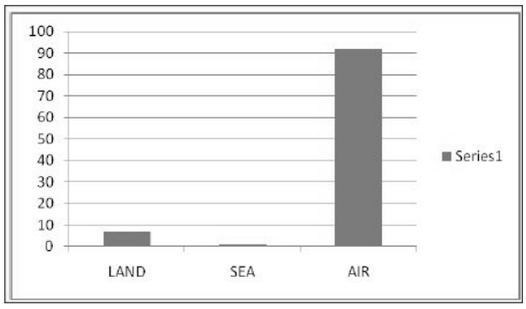
Table-2: Number of FTAs from different regions of the world (in lakhs approximately)

Region/ Country	Eastern Europe	Africa	East Asia	Australia	Central and South America
2011	27	23	47	23	6
2012	31	26	53	24	7

Modes of Travel of Foreign Tourists Arrivals (FTAs) in India.

Travel by 'air' has been found to be the most preferred mode of transport. In 2012, out of the 6.58 million foreign tourist arrivals in India, majority arrived by air (92%), followed by land (7%) and sea (1%). Arrivals through land routes comprised tourists mainly from Bangladesh and Pakistan.

Figure-2: Arrival of Foreign Tourists in India.



Air travel has been the most preferred mode of travel for the FTAs over the years, accounting for above 80% share in each year during this period. During last three years from 2010 onwards, the percentage of FTAs travelling to India by air has remained more than 90%. The share of arrivals through land check-post has been above 10% during 2001 to 2008; however, it has been gradually declining over the last 3 years. Arrivals through sea routes remain less than 1% from 1996 to 2012.

Age Distribution of FTAs in India.

Table-3: The percentage distribution of FTAs in India according to age groups during 1996-2012:

Age - group (in years)	0-15	15-25	25-35	35-45	45-55	55-65	65 & above
% Distribution by Age- Group (in years)	11	8	16	21	20	14	10

During the year 2012, sex-wise distribution of the FTAs comprises of 58.7% males and 41.3% females.

The government's proposal to infuse over Rs. 1,000 crore in developing India as an attractive tourism destination is being seen as a window to draw more foreign tourists and foreign exchange, besides enhancing air connectivity and development of heritage sites within the country.

Now one can easily guess why Max Mueller has said these lines about India-

"If we were to look over the whole world to find out the country most richly endowed with all the wealth, power and beauty that nature can bestow in some parts, a very paradise on earth, I should point to India."

Such is our India. It is undoubtedly a paradise for the tourists.

29. What is the need to promote tourism ? (2)

30. Find mean, median and mode of the data given in fig-1, showing month wise percentage share of foreign tourist arrivals. (4)

31. Draw a histogram to represent the data given in the following table extracted from statistics, surveys and studies table: (4)

Years	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Foreign tourists arrival (in lakhs app.)	44	51	53	52	58	68

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