



# MACRO VISION ACADEMY, BURDHANPUR

## SAMPLE ENTRANCE TEST PAPER 2017-18

Class: XI

Mathematics

Time : 3hr

M.M.: 100

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### ENGLISH (20)

#### Q.1 Read the passage given below and answer the following questions

The 'Little Tramp', the unforgettable character Charlie Chaplin invented, was born purely by accident in 1915. While rushing to a film shoot in California, he grabbed clothes other people had left behind in the changing room. And when he emerged, he found he had created a personality everybody loved. A little guy in a bowler hat, a close-fitting jacket, a cane, outsize shoes and a brush-like moustache!

Before long, Chaplin found himself a star. That puzzled him, for he saw himself essentially as a shy British Music hall comedian. The U.S. acknowledged him as its king of silent film comedy. Soon, so did crowds all over the world.

But life wasn't always a laugh for Charles Spencer Chaplin. Both his parents were Music Hall artists, who separated when Charlie was very young. His childhood was very sad, for his mother never earned enough to look after Charlie and his older brother, Sydney. Sometimes, Chaplin had to sleep on the streets and forage for food in the garbage.

Charlie took his first bow on stage when his mother made her last appearance. It happened when her voice broke during a song. Her son stepped on stage and sang a popular song. That's when a star was born.

Through all these years of success, Charlie never forgot his troubled childhood. It made him recall a Christmas when he was denied two oranges and his bag of sweets for breaking a rule at the orphanage he went to after his mother's death. It would have broken his heart, if the other children had not offered him a share of theirs. Spontaneously, the adult Chaplin gifted the orphanage with a motion picture machine and insisted that each child should have as many oranges and sweets as they pleased.

#### Answer the following questions:

- |  |   |
|--|---|
| (a) Which unforgettable character did Charlie Chaplin invent ? ;       | 1 |
| (b) Describe the personality created by Charlie, whom everybody loved. | 1 |
| (c) What did Charlie see himself as ?'                                 | 1 |
| (d) Give two reasons to show that his early life was very sad.         | 1 |

**Do as directed:**

- (e) The word that means 'to search for food' is.....(para 3) 1  
(f) What is meant by the word 'invented' ? (para 1) 1  
(g) Find the word in the passage opposite in meaning to 'bold' ? (para 2) 1  
(h) Find the word opposite in meaning to 'failure' ? (para 5) 1

**Q.2** Enjoying a cup of tea while sitting on my balcony on a Sunday morning, suddenly I felt a deep pain in my chest. I thought that this was the last moment of my life. I wanted to call my daughter, my husband and everybody to say the final Good Bye, but couldn't do so ....' Imagine what happened after this. Did the family know what happened or did the woman die unnoticed ? Explain what were the plans and aspirations of the woman at the last moment of her life. Write an imaginary story with a suitable title in 150-200 words. 3

**Q.3** Write a letter to the editor of an English daily, making a plea to the common people to switch over to solar energy to conserve electricity and limit electricity bills. 3

**Q.4** Read the following passage and fill in the blank with the given options in the bracket. 3  
Before alighting, the Wild Pigeon, like the Carolina Parrot and a few other species of birds, breaks the force of its flight by repeated flapping, (a) .....(so/although/even/as if) apprehensive of receiving injury from coming too suddenly (b).....(with/in/inside/at) contact, either with the branch, (c).....(or/and/neither/nor) the spot of ground on which it intends to settle.

**Q.5** **Rearrange the following to make meaningful sentences. The first one has been done as an example:** 3

e.g., stands/a/at/population/tiger/in/slim 1411/India/the/today The tiger population stands at a slim 1411 in India today.

- (a) concemed/the/really/Indian/are/authorities  
(b) tigers/the/of/population/falling/is/sharply  
(c) considered/was/tigers,/Sariska,/for/sanctuary/a/which/tigers left/have/any/does not  
(d) for many/on/relied/dogs/people have/generations  
(e) companionship/used/they/for hunting/have been/and  
(c) very/a dog's/are/and ears/sensitive/nose

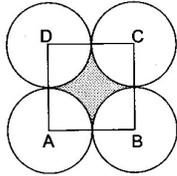
**Mathematics (50)**

**Each questions carries 1 marks**

- Q.6** Find the distance between the points A(7, 13) and B(10, 9). 1  
**Q.7** There are 35 student in a class of whom 20 are boys and 15 are girls. From these students one is chosen at random. What is the probability that the chose student is a (i) boy (ii) girls ? 1  
**Q.8** Find the value of  $x$  for which the distance between the points P(4, -5) and Q(12,  $x$ ) is 10 units. 1

**Q.9** If  $\sin(\theta + 34^\circ) = \cos \theta$  and  $(\theta + 34^\circ)$  is acute, show that  $\theta = 28^\circ$ . 1

**Q.10** In the given figure, ABCD is a square each of whose sides measures 28 cm. Find the area of the shaded region. [Take  $\pi = \frac{22}{7}$ ] 1



**Each questions carries 2 marks**

**Q.11** Obtain all zeros of the polynomial  $(2x^3 - 4x - x^2 + 2)$ , if two of its zero are  $\sqrt{2}$  and  $-\sqrt{2}$ . 2

**Q.12** Sum of the areas of two squares is  $260 \text{ m}^2$ . If the difference of their perimeter is 24 m, then find the sides of the two squares. 2

**Q.13** If  $\sec \theta = \frac{5}{4}$ , show that  $\frac{(2 \cos \theta - \sin \theta)}{(\cot \theta - \tan \theta)} = \frac{12}{7}$  2

**Q.14** From a point P, 10 cm away from the center the center of a circle, a tangent PT of length 8 cm is drawn. Find the radius of the circle. 2

**Q.15** Find the value of k for which each of the following systems of equations has no solution  
 $8x + 5y = 9$ ,  $kx + 10y = 15$  2

**Each questions carries 3 marks**

**Q.16** Find a cubic polynomial with the sum of its zero, sum of the product of its zeros take two at a time and the product of its zeros as 2, -7 and -14 respectively. 3

**Q.17** In what ratio is the line segment joining the points (-2, -3) and (3, 7) divided by the y-axis? Also find the coordinate of the point of division. 3

**Q.18** Prove that :  $\frac{1}{(\sec x - \tan x)} - \frac{1}{\cos x} = \frac{1}{\cos x} - \frac{1}{(\sec x + \tan x)}$  3

**Q.19** If 1 is added to both the numerator and the denominator of a given fraction, it becomes  $\left(\frac{4}{5}\right)$ . If, however, 5 is subtracted from both the numerator and the denominator, the fraction becomes  $\left(\frac{1}{2}\right)$ . Find the fraction. 3

**Q.20** Solve  $5^{(x+1)} + 5^{(2-x)} = 5^3 + 1$  3

**Each questions carries 5 marks**

**Q.21** Prove that  $\sqrt{\frac{1 + \sin \theta}{1 - \sin \theta}} + \sqrt{\frac{1 - \sin \theta}{1 + \sin \theta}} = 2 \sec \theta$  5

**Q.22** Solve  $\frac{1}{(x+4)} - \frac{1}{(x-7)} = \frac{11}{30}$ ,  $x \neq -4, 7$  5

**Q.23** If the sum of the first p terms of an AP is the same as the sum of its first q terms (where  $p \neq q$ ) then show that the sum of its first (p+q) terms is zero. 5

- Q.24** The angle of elevation of an aeroplane from a point on the ground is  $45^\circ$ . After flying for 15 seconds, the elevation changes to  $30^\circ$ . If the aeroplane is flying at a height of 2500 meters, find the speed of the aeroplane. 5

### Chemistry (15)

**Each question carries 1 mark.**

- Q.25** Name the functional group present in propanone. 1
- Q.26** Give the name of the following functional group- 1
- i.  $-\text{OH}$ ,      b)  $-\text{CHO}$       iii)  $-\text{COOH}$       iv)  $> \text{C} = \text{O}$
- Q.27** A metal M belongs to 13<sup>th</sup> group in the modern periodic table. Write the valency of the metal. 1

**Each question carries 2 marks**

- Q.28** Which atom is bigger Na or Mg and Why? 2
- Q.29** Give the symbols for; 2
- i. a metal of group 2      ii. a metal of group 13  
iii. a metal of group 1      iv. a non metal of group 16
- Q.30** Write the IUPAC name of – 2
- i.  $\text{CH}_3-\text{CH}_2-\text{CHO}$       ii.  $\text{CH}_3-\text{CH}=\text{CH}_2$   
iii.  $\text{CH}_3-\text{CH}(\text{OH})-\text{CH}_2-\text{CH}_3$       iv.  $\text{CH}_3-\text{C}\equiv\text{C}-\text{CH}_2-\text{CH}_3$



**Each questions carries 3 marks**

- Q.31** In the following table are given eight elements A,B,C,D,E,F,G & H (here letter are not the usual symbols of the elements) of the modern periodic table with the atomic numbers of the elements in parenthesis. 3

Period	Group I	Group II
2	A (3)	E (4)
3	B (4)	F (12)
4	C (19)	G (20)
5	D (37)	H (38)

- i. What is the electronic configuration of F?
- ii. Write the size of the atoms of E,F,G & H in the decreasing order.
- iii. State whether F is a metal or a non metal
- Q.32** Complete the following reactions- 3
- i.  $\text{CH}_3\text{COOH} + \text{NaHCO}_3 \rightarrow$
- ii.  $\text{HCOOH} + \text{CH}_3\text{OH} \xrightarrow{\text{Conc. H}_2\text{SO}_4}$
- iii.  $\text{CH}_3\text{COO C}_2\text{H}_5 + \text{H}_2\text{O} \xrightarrow{\text{Ht}}$

**Physics (15)**

**Each question carries 1 mark**

**Q.33** Why do stars twinkle? 1

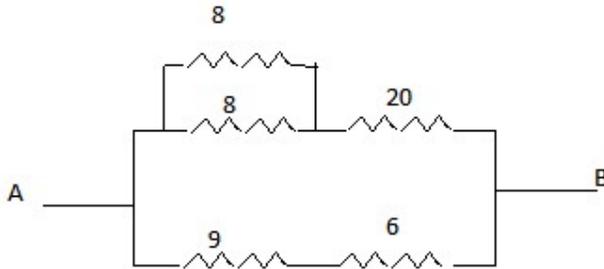
**Each question carries 2 marks**

**Q.34** State the Fleming's left hand rule. 2

**Each question carries 3 marks**

**Q.35** A Circuit has a fuse of 5 A. What is the maximum number of 100 W (220v) bulbs that can be safely used in circuit? 3

**Q.36** Calculate the equivalent resistance between the points A and B as shown in the figure



(Resistance are given in Ohm) 3

**Q.37** An object of size 7.0cm is placed at 27 cm in front of a concave mirror of focal length 18 cm. at what distance from the mirror should a screen be placed, so that a sharp focused image can be obtained? Find the size and the nature of the image? 3

**Q.38** a) What is the effect of temperature on resistance of – pure metals, insulators and semi – conductors.

b) Write difference between direct and alternate current. 3