

# Phase – II

# **Question Paper**

**Class - IX** 

**M.M:70** 

## **Time:70 Minutes**

# **OFFLINE EXAMINATION (PHASE-II)**

Name:\_\_\_\_\_Reg. No.\_\_\_\_Mobile No.\_\_\_\_

#### **General Instructions:**

- Duration of the examination is 70 Minutes. Question Paper contains 70 questions 1. with maximum 70 marks.
- 2. There will be negative marking in Phase – II, i.e.  $\frac{1}{4}$  mark will be deducted for each incorrect answer.
- 3. Use of gadgets is not allowed.
- 4. Students must abide by the instructions issued during the examination by the invigilator or the Centre incharge.
- Before attempting the question paper ensure that it contains all pages & no question is 5. missing.
- Immediately fill the particulars on this page of the test booklet and **OMR** with 6. **BLACK** ballpoint pen only. Use of pencil is strictly prohibited.
- 7. Darken the bubbles completely. Do not put a tick  $\square$  or across  $\square$ . Fill the bubbles completely.
- Half -filled or over-filled bubbles will not be read by the software & liable to be 8. rejected.

**Correct Method** 



Student's Signature

Invigilator's Signature

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			(Situation in the past)	
	ENGLISH (10 Marks)		A) would	
Q1.	He said, "I don't know the way. Do		B) used to	
	you?"		C) shall	
	(Change into Indirect speech)		D) could	
	A) He tells that he didn't know the way	Q5.	We had a chata cup of tea	a.
	but asked if she did.		A) at	
	B) He told that he doesn't know the		B) on	
	way and further asked if she does.		C) over	
	C) He said he don't know the way and		D) to	
	asked if she knew it.	Q6.	You cannot apply you are	e
	D) He said that he didn't know the way		graduate.	
	and asked her if she did.		A) unless	
Q2.	The book is under printing.		B) or	
	(Change into Passive Voice)		C) either	
	A) The book is under to be printed.		D) till	
	B) The book is being printed.	Q7.	With hard work andluc	ck,
	C) The printing of the book is under		nothing can stop you in your way to	ł
	process.		success.	
	D) None of these.		A) few	
Q3.	Choose the one option that best		B) little	
	expresses the meaning of the given		C) a little	
	idiom/phrase:		D) plenty	
	'French leave'	Q8.	He is prone tomistakes	5.
	A) Casual leave		A) make	
	B) Absence without permission		B) made	
	C) Absence with permission		C) have made	
	D) Maternity leave		D) making	
Fill up the blanks choosing the best option:		Q9.	By the year 2015, Rajanhi	S
(Q4. to Q9.)			Master's degree.	
04.	There be a school here.		A) will have attained	

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- B) has attained
- C) attained
- D) have attained
- Q10. Identify the underlined clause by

#### choosing the best option:

I knew where <u>I could find him</u>.

- A) Noun clause
- B) Adjective clause
- C) Adverb clause
- D) Principal clause

### **MATHEMATICS (20 Marks)**

- Q11. Consider two squares *ABCD* and *BEFG* with the side length of 10cm and 12cm respectively as shown below. Find the area of shaded region.
  - A) 100

B) 120

C) 50

D) 60



- Q12. In the figure,  $\triangle ABC$  is inscribed in circle with centre  $O, \angle ACB =$  $54^{\circ}, \angle CBA = 70^{\circ}$  and  $AD \perp BC$ . Join AO and extend it to meet the circle at *E*, find  $\angle DAE$ .
  - A) **16**°
  - B) **54**°
  - C) 20°
  - D) **56**°



that its circumference is increased by 5%, then area of the circle increases by:

- A) 12.5%
- B) 10.25%
- C) 10.5%
- D) 11.25%
- Q14. Marbles of diameter 1.4cm are dropped into a cylindrical beaker containing some water and are fully submerged. The diameter of the beaker is 7cm. Find how many marbles have been dropped in it if the water rises by 5.6cm.
  - A) 150
  - B) 100
  - C) 50
  - D) 300

Q15. Find the remainder when **3<sup>2000</sup>** is divided by 13.

- A) 0
- B) 3
- C) 6
- D) 9
- Q16. Find the equation of the line equidistant

from x = 2 and x = 8. A) x = 4

- B) *x* = 5
- C) **y** = 6
- D) *y* = 5

- Q17. If the point (a, b) lies on x-axis and (c, d) lies on the line y = 2 then  $b^2 + b^2$ 
  - **d**<sup>2</sup> is:
  - A) 4
  - B) 25
  - C) 9
  - D) 0
- Q18. P is vertex of cuboid and Q, R and S are three points on the adjacent edges passing through P as shown. PQ = PR = 2cm and PS = 1cm. Then the area of  $\Delta$ QRS (in cm<sup>2</sup>) is:



D) **2**√**2** 

- Q19. In a family with 3 children find the probability of at most 1 boy.
  - A) 0
  - B) 1/3
  - C) 1/2
  - D) 7/8
- Q20. The mean of all prime numbers between 50 to 80 will be:
  - A)  $65\frac{1}{7}$
  - B) **63**<sup>1</sup>/<sub>7</sub>
  - C) 66<sup>1</sup>/<sub>7</sub>
  - D) 67<sup>1</sup>/<sub>7</sub>

- Q21. If each observation in a data is multiplied by 3 then find the percentage of change in the mean.
  - A) 30%
  - B) 300%
  - C) 150%
  - D) None of these
- Q22. The mean of a group of eleven consecutive natural numbers is **m**. What will be the percentage change in the mean when next six consecutive natural numbers are included in the group?

A) 
$$m\%$$
  
B)  $\frac{m}{3}\%$   
C)  $\frac{m}{300}\%$   
D)  $\frac{300}{m}\%$ 

- Q23. A cube of side 12cm, is painted blue on all the faces and then cut into smaller cubes each of side 3cm. The total number of smaller cubes having none of their faces painted blue will be:
  - A) 8
  - B) 12
  - C) 16
  - D) 24
- Q24. Solve xy = x + y + 3 for integer values of x and y, find the number of integral solutions.

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A) 4				
B) 5				
C) 6	Q			
D) 2				
Q25. If $3^x + 2^y = 985$ and $3^x - 2^y =$				
<b>473</b> , what is the value of <i>xy</i> ?				
A) 28				
B) 38				
C) 48				
D) 58				
Q26. $\frac{1}{\sqrt{2011+\sqrt{2011^2-1}}} = \sqrt{m} - \sqrt{n}$ , where <i>m</i>	Q			
and $\boldsymbol{n}$ are positive integers, what is the				
value of $m + n$ ?				
A) 2011				
B) 2022				
C) 2010				
D) 1				
Q27. Arrange the following in descending				
order: <b>2</b> <sup>5555</sup> , <b>3</b> <sup>3333</sup> , <b>6</b> <sup>2222</sup>				
A) $2^{5555} > 3^{3333} > 6^{2222}$				
B) $2^{5555} > 6^{2222} > 3^{3333}$				
C) $3^{3333} > 2^{5555} > 6^{2222}$	Q			
D) $6^{2222} > 2^{5555} > 3^{3333}$				
Q28. Three real numbers $x, y, z$ are such that				
$x^2 + 6y = -17, y^2 + 4z = 1 \& z^2 +$				
$2x = 2$ . What is the value of $x^2 +$				
$y^2 + z^2$ ?				
A) 8				
B) 10				

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- C) 12
- D) 14
- Q29. A triangle with perimeter 7 has integer side lengths. If maximum possible area of such triangle is of the form  $\frac{a\sqrt{b}}{c}$ . Find the sum of a + b + c. A) 10
  - B) 12
  - C) 14
  - D) 16
- Q30. Find the area of equilateral  $\Delta$  in which perpendiculars are drawn on the sides from a point inside the triangle of length  $\sqrt{3}$  cm,  $2\sqrt{3}$  cm &  $5\sqrt{3}$  cm respectively.
  - A) **8√3**
  - B) **16√3**
  - C) **48**√**3**
  - D)  $64\sqrt{3}$

## SOCIAL SCIENCE (10 Marks)

#### Q31. Choose the incorrect statement:

- A) Blue white red were the national colours of France.
- B) The winged woman was the symbol of the personification of the law.
- C) Scepter was the symbol of democracy.
- D) A broken chain stands for the act of becoming free.

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Q32. When was the Russian Social	A) Latin
Democratic Workers Party founded in	B) Arabic
U.S.S.R.?	C) French
A) 1898	D) Spanish
B) 1899	Q36. We have seen in lesson 'People as a
C) 1900	Resource' that India's large population
D) 1901	has been more of a liability for the
Q33. Choose the correct statement:	nation. However, it is not the case with
A) The world's largest drainage basin is	every highly populated country. How
of the Nile River.	can we convert this liability into an
B) Ganga river has the largest basin in	asset?
India.	A) By educating the population
C) Brahmaputra is known as the Tsang	B) By providing skill training to the
Po in Tibet and Jamuna in	population
Bangladesh.	C) By investing in the health of the
D) None of these.	population
Q34. Match the following:	D) All of the above
(a) Chandra Prabha (1) Telangana	Q37. What is term limit for Rajya Sabha
Wildlife Sanctuary	members?
(b) Mahanadi Wildlife (2) Rajasthan	A) 3 years
Sanctuary	B) 6 years
(c) Kawal Wildlife (3) Uttar	C) 4 years
Sanctuary Pradesh	D) 5 years
(d) Sariska Wildlife (4) West Bengal	Q38. According to the National Food
Sanctuary	Security Act, 2013 what percentage of
A) a–1, b–2, c–3, d–4	rural people have been categorized as
B) a–4, b–3, c–2, d–1	eligible households for food security?
C) a–3, b–4, c–1, d–2	A) 25%
D) a–3, b–4, c–2, d–1	B) 50%
Q35. From which language the word 'El	C) 75%
Nino' is derived?	D) 80%

- Q39. In the Indian Constitution, the power to issue writs is vested upon in the hands of:
  - A) Supreme Court
  - B) High Court
  - C) Subordinate Court
  - D) Both Supreme and High Court
- Q40. Which country is known as the 'Rainbow Nation'?
  - A) India
  - B) USA
  - C) South Africa
  - D) Sri Lanka

### **APTITUDE (10 Marks)**

Q41. In a certain code, REFRIGERATOR is coded as ROTAREGIRFER. Which word would be coded as NOITINUMMA?
A) AMMIUNTION
B) AMMUNITOIN
C) AMMUNITION

#### D) AMUMNITION

- Q42. Observing the pattern given in the following sequence, identify the missing number in the sequence?
  - 3, 18, 219, \_\_\_\_\_, 10005
  - A) 1743
  - B) 1746
  - C) 4096
  - D) 4100

- Q43. The minute hand of a clock overtakes the hour hand at intervals of 63 min of the correct time. How much does a clock gain or loss in a day?
  - A)  $54 \frac{8}{77}$  min. (gain) B)  $56 \frac{8}{77}$  min. (gain) C)  $53 \frac{8}{77}$  min. (gain) D)  $53 \frac{8}{77}$  min. (loss)
- Q44. The Republic Day of India was celebrated on Friday in the year 2008. On which day, will it be celebrated in 2012?
  - A) Tuesday
  - B) Wednesday
  - C) Thursday
  - D) Friday
- Direction (Q45): Study the following information to answer the given question.

Ten people are sitting in two parallel rows containing five people each, in such a way that there is an equal distance between adjacent persons. In row 1 - P, Q, R, S and T are seated and all of them are facing South. In row 2 - A, B, C, D and E are seated and all of them are facing North.

Therefore, in the given seating arrangement each member seated in a

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row faces another member of the other row. D sits third to the left of A. P faces immediate neighbour of D, R sits second to the right of P. Only one person sits between Q and S, B and E are immediate neighbours of each other. E does not face P and Q.

Q45. How many persons are seated between

- Q and T?
- A) None
- B) One
- C) Two
- D) Three

Direction (Q46): Answer the questions on the basis of the information given below.

> The head of a newly formed Government desires to appoint five of the six elected ministers P, Q, R, S, T and U to portfolios of Foreign, Industry and Commerce, Agriculture, Rural Development and Human Resources.

> U does not want any portfolio if S gets one of the five. R wants either Foreign or Human Resources or no portfolio. Q says that if S gets

industry and Commerce or Rural Development, then she must get the other one. T insists on a portfolio if P gets one.

Q46. Which of the following is a valid

assignment?

- A) P-Foreign, Q-Industry andCommerce, R-Agriculture, S-RuralDevelopment, T-Human Resources
- B) R-Foreign, S-Industry and
   Commerce, P-Agriculture, Q-Rural
   Development, T-Human Resources
- C) P-Foreign, Q-Industry andCommerce, T- Agriculture, S-RuralDevelopment, U-Human Resource
- D) Q-Foreign, U-Industry andCommerce, T-Agriculture, R-RuralDevelopment, P-Human Resources

## Direction (Q.47) Study the following information to answer the following questions.

A number arrangement machine, when given an input line of numbers, rearranges them following a particular rule in each step. The following is the illustration of the input and the steps of arrangement.

Input	13 25 9 17 15 32 7 20
Step I	8 20 4 12 10 27 2 15
Step II	22 34 18 26 24 41 16 29
Step III	121 529 49 225 169 900
	25 324
Step IV	169 625 81 289 225 1024
	49 400
Step V	144 576 64 256 196 961
	36 361





- Step VI 676 2500 324 1156 900 4096 196 1600
- Q47. What will be the fourth step of the following input?
  - Input 8 18 28 38 48 58 68 27
  - A) 46, 289, 1444, 2304, 3364, 4624, 729
  - B) 64, 324, 784, 1444, 2304, 3364, 4624, 729
  - C) 64, 324, 748, 1444, 2364, 4624, 729
  - D) 64, 748, 324, 1444, 2304, 3364,
    - 4624, 729
- Q48. Count the number of parallelograms in the given figure.



Q49. Two friends Mr. A and B stand according to figure 1. The two friends then interchange their positions as given in figure 2.



The height of the wall from the ground

- is \_\_\_\_\_.
- A) 115 cm
- B) 120 cm
- C) 127.5 cm
- D) 130 cm
- Q50. Find the value of # in the figure given below.



## PHYSICS (07 Marks)

Q51. If velocity of block B in the given arrangement is 300 mm/sec. Then velocity of A will be:



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- C) 450 mm/sec
- D) 150 mm/sec
- Q52. Find the reading of spring balance as shown in figure. Assume that mass M is in equilibrium. All surfaces are smooth.



- A) 8 N
- B) 9 N
- C) 12 N
- D) Zero
- Q53. For the arrangement shown in figure, the tension in the string to prevent it from sliding down, is:
  - A) 6 N
  - B) 6.4 N
  - C) 0.4 N
  - D) Zero

m = 163 $\mu = 0.8$  $1/37^{\circ}$ 

Q54. Two particles A and B (of masses m and 4m) are released from rest in the two tunnels as shown in the figure. Which particle will cross the equatorial



- A) A B) B
- C) Both simultaneously
- D) Data insufficient
- Q55. A person P is 600 m away from the station. When train is approaching station with 72 km/h, it blows



- a whistle of frequency 800 Hz when 800 m away from the station. Find the frequency heard by the person P at rest. Speed of sound =  $340 \text{ms}^{-1}$ .
- A) 800 Hz
- B) 839.5 Hz
- C) 829.5 Hz
- D) 843.5 Hz
- Q56. In the figure, a ball A is released from rest when the spring is at its natural (unstretched) length. For the block B of mass M to leave contact with the ground at some stage, the minimum mass of A must be:



Q57. A solid sphere of radius R and density  $\rho$  is attached to one end of a massless

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spring of force constant $\boldsymbol{k}$ . The other	Q60. The number of sodium atoms in 2
end of the spring is connected to	moles of sodium ferrocyanide is:
another solid sphere of radius $\boldsymbol{R}$ and	A) $12 \times 10^{23}$
density $3\rho$ . The complete arrangement	B) $26 \times 10^{23}$
is placed in a liquid of density $2\rho$ and	C) $34 \times 10^{23}$
is allowed to reach equilibrium. The	D) $48 \times 10^{23}$
correct statement(s) is(are):	Q61. Caffeine has a molecular weight of 194.
A) The net elongation of the spring is	If it contains 28.9% by mass of
$\frac{4\pi R^3 \rho g}{2L}$	nitrogen, number of atoms of nitrogen
B) The net elongation of the spring is	in one molecule of caffeine is:
$8\pi R^3 \rho g$	A) 4
$\frac{3k}{3k}$	B) 6
C) The light sphere is partially	C) 2
submerged	D) 3
D) None of these	Q62. Which among the following species
	have the same number of electrons in
<b>CHEMISTRY (07 Marks)</b>	its outermost as well as penultimate
Q58. If the four tubes of a car are filled to the	shell?
same pressure with $N_2, O_2, H_2$ and	A) <b>Mg</b> <sup>2+</sup>
helium separately, then which one will	B) <b>0</b> <sup>2-</sup>
be filled first.	C) <b>F</b> <sup>-</sup>
A) <b>N</b> <sub>2</sub>	D) <b>Ca<sup>2+</sup></b>
B) <b>0</b> 2	Q63. A hydrocarbon contains 80% carbon.
C) <b><i>H</i></b> <sub>2</sub>	What is the empirical formula of the
D) <i>He</i>	compound?
Q59. Brownian motion shown by colloidal	A) CH <sub>2</sub>
particle is its property.	B) CH <sub>3</sub>
A) Optical	C) CH <sub>4</sub>
B) Electrical	D) CH
C) Kinetic	Q64. Which of the following is the best
D) Chemical	scientific method to test the presence

- of water in a liquid?
- A) Use of anhydrous copper sulphate
- B) Use of litmus paper
- C) Taste
- D) Smell

## **BIOLOGY (06 Marks)**

- Q65. Which one of the following statements about cell organelles and their function is correct?
  - A) Mitochondria are associated with anaerobic respiration.
  - B) Smooth endoplasmic reticulum is involved in protein synthesis.
  - C) Lysosomes are important in membrane biogenesis.
  - D) Golgi bodies are involved in packaging and dispatching of materials.

Q66. Grass stem elongates by the activity of:

- A) Primary meristem
- B) Secondary meristem
- C) Intercalary meristem
- D) Apical meristem
- Q67. Body cavity of Hydra is known as:
  - A) Coelenteron
  - B) Pseudocoel

- C) Enterocoel
- D) Haemocoel
- Q68. Inland fisheries are related to:
  - A) Culturing of fish in fresh water
  - B) Trapping and capturing fish from sea shore
  - C) Deep sea fisheries
  - D) Extraction of oil from fishes
- Q69. Which WBC related to cell mediated immunity?
  - A) T-lymphocyte
  - B) Basophil
  - C) Neutrophil
  - D) B-lymphocyte
- Q70. In a highly pesticide polluted pond, which of the following aquatic organisms will have the maximum amount of pesticide per gram of body mass?
  - A) Lotus
  - B) Fishes
  - C) Spirogyra
  - D) Zooplanktons

# **SPACE FOR ROUGH WORK**

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