RPS 4th All India Online & Offline Mega Event OLYMPIAD 2023 40 Prizes in each Class Golden opportunity to win

Phase – II Question Paper Class - IX

M.M:60 **Time:60 Minutes**

OFFLINE EXAMINATION (PHASE–II)

Name:_____Reg. No._____Mobile No._____

General Instructions:

1. Duration of the examination is 60 Minutes. Question Paper contains 70 questions with maximum 60 marks.
2. There will be negative marking in Phase – II, i.e. ¼ 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.
5. Before attempting the question paper ensure that it contains all pages & no question is missing.
6. Immediately fill the particulars on this page of the test booklet and **OMR** with **BLACK** ballpoint pen only. Use of pencil is strictly prohibited.
7. Darken the bubbles completely. Do not put a tick☑ or across ☒. Fill the bubbles completely.
8. Half –filled or over-filled bubbles will not be read by the software & liable to be rejected.

Correct Method

Wrong Method

Student's Signature

Invigilator's Signature

ENGLISH (10 Marks)

Q1. He said, "I don't know the way. Do you?"

(Change into Indirect speech)

A) He tells that he didn't know the way but asked if she did.

B) He told that he doesn't know the way and further asked if she does.

C) He said he don't know the way and asked if she knew it.

D) He said that he didn't know the way and asked her if she did.

Q2. The book is under printing.

(Change into Passive Voice)

A) The book is under to be printed.

B) The book is being printed.

C) The printing of the book is under process.

D) None of these.

Q3. **Choose the one option that best expresses the meaning of the given idiom/phrase:**

'French leave'

A) Casual leave

B) Absence without permission

C) Absence with permission

D) Maternity leave

Fill up the blanks choosing the best option: (Q4. to Q9.)

Q4. There_____be a school here.

(Situation in the past)

A) would

B) used to

C) shall

D) could

Q5. We had a chat_____a cup of tea.

A) at

B) on

C) over

D) to

Q6. You cannot apply_____you are graduate.

A) unless

B) or

C) either

D) till

Q7. With hard work and_____luck, nothing can stop you in your way to success.

A) few

B) little

C) a little

D) plenty

Q8. He is prone to_____mistakes.

A) make

B) made

C) have made

D) making

Q9. By the year 2015, Rajan_____his Master's degree.

A) will have attained

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)

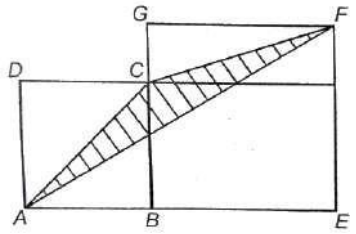
Q11. Consider two squares $\boldsymbol{ABCD}$ and $\boldsymbol{BEFG}$ with the side length of 10cm and 12cm respectively as shown below. Find the area of shaded region.

A) 100

B) 120

C) 50

D) 60



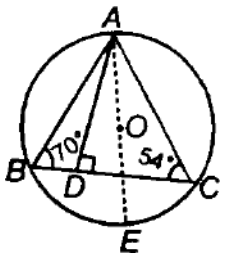
Q12. In the figure, $\Delta\boldsymbol{ABC}$ is inscribed in circle with centre $\boldsymbol{O}, \angle\boldsymbol{ACB} = \boldsymbol{54^o}$, $\angle\boldsymbol{CBA} = \boldsymbol{70^o}$ and $\boldsymbol{AD} \perp \boldsymbol{BC}$. Join $\boldsymbol{AO}$ and extend it to meet the circle at $\boldsymbol{E}$, find $\angle\boldsymbol{DAE}$.

A) $\boldsymbol{16^o}$

B) $\boldsymbol{54^o}$

C) $\boldsymbol{20^o}$

D) $\boldsymbol{56^o}$



Q13. The radius of a circle is so increased, 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 $\boldsymbol{3^{2000}}$ is divided by 13.

A) 0

B) 3

C) 6

D) 9

Q16. Find the equation of the line equidistant from $\boldsymbol{x = 2}$ and $\boldsymbol{x = 8}$.

A) $\boldsymbol{x = 4}$

B) $\boldsymbol{x = 5}$

C) $\boldsymbol{y = 6}$

D) $\boldsymbol{y = 5}$

Q17. If the point $(\boldsymbol{a}, \boldsymbol{b})$ lies on x-axis and $(\boldsymbol{c}, \boldsymbol{d})$ lies on the line $\boldsymbol{y = 2}$ then $\boldsymbol{b^2 + d^2}$ is:

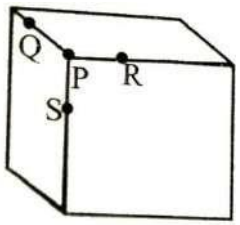
A) 4

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 ΔQRS (in cm^2) is:



A) $\frac{\sqrt{15}}{4}$

B) $\frac{5}{2}$

C) $\sqrt{6}$

D) $2\sqrt{2}$

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) $63\frac{1}{7}$

C) $66\frac{1}{7}$

D) $67\frac{1}{7}$

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 $\boldsymbol{m}$. What will be the percentage change in the mean when next six consecutive natural numbers are included in the group?

A) $\boldsymbol{m}$%

B) $\frac{\boldsymbol{m}}{3}$%

C) $\frac{\boldsymbol{m}}{300}$%

D) $\frac{300}{\boldsymbol{m}}$%

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 $\boldsymbol{xy = x + y + 3}$ for integer values of $\boldsymbol{x}$ and $\boldsymbol{y}$, find the number of integral solutions.

A) 4

B) 5

C) 6

D) 2

Q25. If $3^x + 2^y = 985$ and $3^x - 2^y = 473$, what is the value of xy?

A) 28

B) 38

C) 48

D) 58

Q26. $\frac{1}{\sqrt{2011+\sqrt{2011^2-1}}} = \sqrt{m} - \sqrt{n}$, where m and 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: 2^{5555}, 3^{3333}, 6^{2222}

A) $2^{5555} > 3^{3333} > 6^{2222}$

B) $2^{5555} > 6^{2222} > 3^{3333}$

C) $3^{3333} > 2^{5555} > 6^{2222}$

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

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 Δ 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) $8\sqrt{3}$

B) $16\sqrt{3}$

C) $48\sqrt{3}$

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.

Q32.When was the Russian Social Democratic Workers Party founded in U.S.S.R.?

A) 1898

B) 1899

C) 1900

D) 1901

Q33. **Choose the correct statement:**

A) The world's largest drainage basin is of the Nile River.

B) Ganga river has the largest basin in India.

C) Brahmaputra is known as the Tsang Po in Tibet and Jamuna in Bangladesh.

D) None of these.

Q34. **Match the following:**

(a) Chandra Prabha Wildlife Sanctuary	(1) Telangana
(b) Mahanadi Wildlife Sanctuary	(2) Rajasthan
(c) Kawal Wildlife Sanctuary	(3) Uttar Pradesh
(d) Sariska Wildlife Sanctuary	(4) West Bengal

A) a–1, b–2, c–3, d–4

B) a–4, b–3, c–2, d–1

C) a–3, b–4, c–1, d–2

D) a–3, b–4, c–2, d–1

Q35. From which language the word 'El Nino' is derived?

A) Latin

B) Arabic

C) French

D) Spanish

Q36. We have seen in lesson 'People as a Resource' that India's large population has been more of a liability for the nation. However, it is not the case with every highly populated country. How can we convert this liability into anasset?

A) By educating the population

B) By providing skill training to the population

C) By investing in the health of the population

D) All of the above

Q37. What is term limit for Rajya Sabha members?

A) 3 years

B) 6 years

C) 4 years

D) 5 years

Q38. According to the National Food Security Act, 2013 what percentage of rural people have been categorized as eligible households for food security?

A) 25%
B) 50%
C) 75%
D) 80%

Q39. In the Indian Constitution, the power to issue writs is vested upon in the hands of:

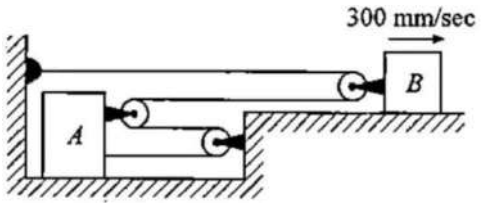
A) Supreme Court
B) High Court
C) Subordinate Court
D) Both Supreme and High Court

Q40. Which country is known as the 'Rainbow Nation'?

A) India
B) USA
C) South Africa
D) Sri Lanka

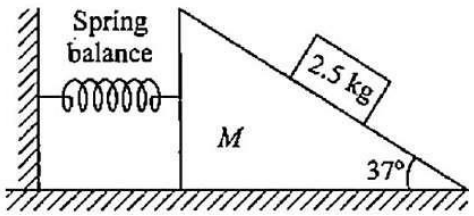
PHYSICS (07 Marks)

Q41. If velocity of block B in the given arrangement is 300 mm/sec. Then velocity of A will be:



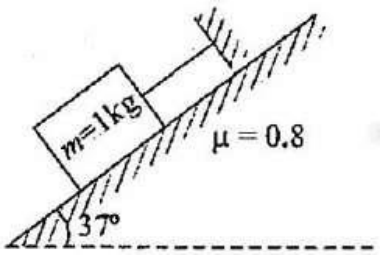
A) 200 mm/sec
B) 100 mm/sec
C) 450 mm/sec
D) 150 mm/sec

Q42. Find the reading of spring balance as shown in figure. Assume that mass M is in equilibrium. All surfaces are smooth.



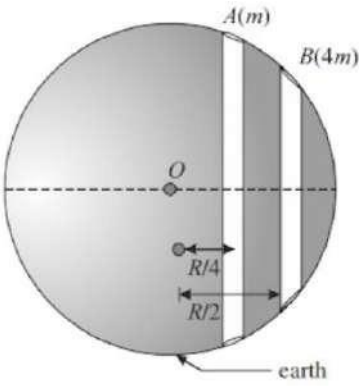
A) 8 N
B) 9 N
C) 12 N
D) Zero

Q43. For the arrangement shown in figure, the tension in the string to prevent it from sliding down, is:



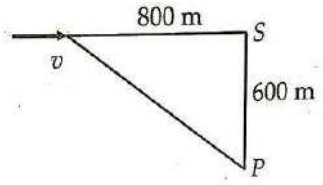
A) 6 N
B) 6.4 N
C) 0.4 N
D) Zero

Q44. 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 plane first?



A) A
B) B
C) Both simultaneously
D) Data insufficient

Q45. 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 = $\mathbf{340 ms^{-1}}$.

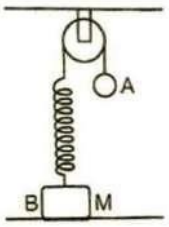
A) 800 Hz

B) 839.5 Hz

C) 829.5 Hz

D) 843.5 Hz

Q46. 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:



A) 2M

B) M

C) M/2

D) Depend on spring constant

Q47. A solid sphere of radius $\boldsymbol{R}$ and density $\boldsymbol{\rho}$ is attached to one end of a massless spring of force constant $\boldsymbol{k}$. The other end of the spring is connected to another solid sphere of radius $\boldsymbol{R}$ and density $\mathbf{3}\boldsymbol{\rho}$. The complete arrangement is placed in a liquid of density $\mathbf{2}\boldsymbol{\rho}$ and is allowed to reach equilibrium. The correct statement(s) is(are):

A) The net elongation of the spring is $\frac{\mathbf{4}\pi \boldsymbol{R^3}\boldsymbol{\rho}\mathbf{g}}{\mathbf{3}\boldsymbol{k}}$

B) The net elongation of the spring is $\frac{\mathbf{8}\pi \boldsymbol{R^3}\boldsymbol{\rho}\mathbf{g}}{\mathbf{3}\boldsymbol{k}}$

C) The light sphere is partially submerged

D) None of these

CHEMISTRY (07 Marks)

Q48. If the four tubes of a car are filled to the same pressure with $\boldsymbol{N_2}$, $\boldsymbol{O_2}$, $\boldsymbol{H_2}$ and helium separately, then which one will be filled first.

A) $\boldsymbol{N_2}$

B) $\boldsymbol{O_2}$

C) $\boldsymbol{H_2}$

D) $\boldsymbol{He}$

Q49. Brownian motion shown by colloidal particle is its_____property.

A) Optical

B) Electrical

C) Kinetic

D) Chemical

Q50. The number of sodium atoms in 2 moles of sodium ferrocyanide is:

A) 12×10^{23}

B) 26×10^{23}

C) 34×10^{23}

D) 48×10^{23}

Q51. Caffeine has a molecular weight of 194. If it contains 28.9% by mass of nitrogen, number of atoms of nitrogen in one molecule of caffeine is:

A) 4

B) 6

C) 2

D) 3

Q52. Which among the following species have the same number of electrons in its outermost as well as penultimate shell?

A) Mg^{2+}

B) O^{2-}

C) F^{-}

D) Ca^{2+}

Q53. A hydrocarbon contains 80% carbon. What is the empirical formula of the compound?

A) CH_2

B) CH_3

C) CH_4

D) CH

Q54. Which of the following is the best 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)

Q55. 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.

Q56. Grass stem elongates by the activity of:

A) Primary meristem

B) Secondary meristem

C) Intercalary meristem

D) Apical meristem

Q57. Body cavity of Hydra is known as:

A) Coelenteron

B) Pseudocoel

C) Enterocoel

D) Haemocoel

Q58. 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

Q59. Which WBC related to cell mediated immunity?

A) T-lymphocyte

B) Basophil

C) Neutrophil

D) B-lymphocyte

Q60. 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

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