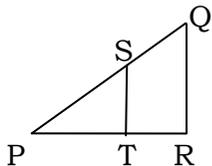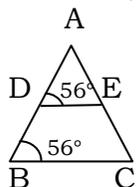I. Choose the correct answer: 10x1=10

1. In a given figure ST ||QR, PS=2cm, SQ=3cm. Then the ratio of the area of ΔPQR to the area of ΔPST is _____.
   a) 25:4   b) 25:7   c) 25:11   d) 25:13

2. If in ΔABC, DE||BC, AB=3.6cm, AC=2.4cm, AD=2.1cm then the length of AE is _____.
   a) 1.4cm   b) 1.8cm   c) 1.2cm   d) 1.05cm

3. The height of a right circular cone whose radius is 5cm and slant height is 13cm will be _____.
   a) 12cm   b) 10cm   c) 13cm   d) 5cm

4. If the radius of the base of a cone is tripled and the height is doubled then the volume is _____.
   a) made 6 times   b) made 18 times
   c) made 12 times   d) unchanged

5. The curved surface area of a right circular cone of height 15cm and base diameter 16cm is _____.
   a) 60πcm²   b) 68πcm²   c) $120\,\pi$cm²   d) $136\,\pi$cm²

6. A shuttle cork used for playing badminton has the shape of the combination of _____
   a) a cylinder and a sphere
   b) a hemisphere and a cone
   c) a sphere and a cone
   d) frustum of a cone and a hemisphere

7. The height of a right circular cone whose radius is 5cm and slant height is 13cm will be _____.
   a) 12cm   b) 10cm   c) 13cm   d) 5cm

8. In the figure, the value of x is equal to _____.
   a) 4.2   b) 3.2   c) 0.8   d) 0.4

9. The curved surface area of a right circular cylinder of radius 1cm and height 1cm in equal to _____.
   a) πcm²   b) 2πcm²   c) 3πcm²   d) 2cm²

10. The T.S.A of a solid hemisphere of diameter 2cm is equal to _____.
    a) 12cm²   b) $12\,\pi$cm²   c) 4πcm²   d) $3\,\pi$cm²

II. Answer any six of the following: 6x2=12

11. Find the diameter of a sphere whose surface area is 154m².

12. The volume of a solid right circular cone is 11088cm³. If its height is 24cm. Then find the radius of the cone.

13. If the ratio of radii of two spheres is 4:7, find the ratio of their volumes.

14. How many litres of water will a hemispherical tank whose diameter is 4.2m?

15. A cone of height 24cm is made up of modeling clay. A child reshapes it in the form of a cylinder of same radius as cone. Find the height of the cylinder.

16. D and E are respectively the points on the sides AB and AC of a ΔABC such that AB=5.6cm, AD=1.4cm, AC=7.2cm and AE=1.8cm. Show that DE || BC.

17. In ΔABC, AD is the bisector of ∠A meeting side BC at D. If AB=10cm, AC=14cm, BC=6cm. Find BD.

18. If the surface area of a sphere is 100πcm² then find its radius.

III. Answer any four of the following: (Q.No.24 compulsory)
                                                       4x5=20

19. A solid iron cylinder has total surface area of 1848 sq.m. Its curved surface area is five-sixth of its total surface area. Find the radius and height of the iron cylinder.

20. A container open at the top is in the form of a frustum of a cone of height 16cm with radii of its lower and upper ends are 8cm and 20cm respectively. Find the cost of milk which can completely fill a container at the rate of ₹40 per litre.

21. A solid right circular cone of diameter 14cm and height 8cm is melted to form a hollow sphere. If the external diameter of the sphere is 10cm. Find the internal diameter.

22. Nathan an engineering student was asked to make a model shaped like a cylinder with two cones attached at its two ends. The diameter of the model is 3cm and its length is 12cm. If each cone has a height of 2cm find the volume of the model that Nathan made.

23. In trapezium ABCD, AB ||CD, E and F are points on non-parallel sides AD and BC respectively such that EF||AB. Show that $^{AE}/_{ED} = {}^{BF}/_{FC}$

24. State and prove Angle Bisector Theorem.

IV. Answer the following: 1x8=8

25. Construct a ΔPQR which the base PQ=4.5cm, ∠R=35° and the median from R to RG is 6cm.

18.11.19 (AN)   EVERWIN MATRIC. HR. SEC. SCHOOL   Time: 1 Hr.
Std: X (K-N)   COMPREHENSIVE REVISION PROGRAMME (CRP)- II   Marks: 50
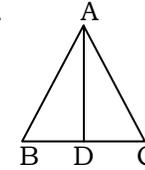MATHS - PART-I

I. Choose the correct answer: 10x1=10

1. The ratio of the volumes of a cylinder, a cone and a sphere, if each has the same diameter and same height is _____.
  a) 1:2:3   b) 2:1:3   c) 1:3:2   d) 3:1:2

2. The total surface area of a hemisphere is how much times the square of its radius?
  a) π b) 4π c) 3π d) 2π

3. A spherical ball of radius r_1 units is melted to make 8 new identical balls each of radius r_2 units. Then $r_1 : r_2$ is _____.
  a) 2:1   b) 1:2   c) 4:1   d) 1:4

4. The total surface area of a cylinder whose radius is $\frac{1}{3}$ of its height is
  a) $\frac{9\pi h^2}{8}$ sq. units   b) $24\pi h^2$ sq. untis
  c) $\frac{8\pi h^2}{9}$ sq. units   d) $\frac{56\pi h^2}{9}$ sq. units

5. A solid sphere of radius $x$cm is melted and cast into a shape of a solid cone of same radius. The height of the cone is _____.
  a) $3x$ cm   b) x cm   c) $4x$ cm   d) $2x$ cm

6. The perimeters of two similar triangles are 24cm and 18cm respectively. If one side of the first triangle is 8cm, then the corresponding side of the other triangle is _____.
  a) 4cm   b) 3cm   c) 9cm   d) 6cm

7. In ΔLMN, $\angle$L=60°, $\angle$M=50°. If ΔLMN~ΔPQR then the value of $\angle$R is _____.
  a) 40°   b) 70°   c) 30°   d) 110°

8. How many tangents can be drawn to the circle from an exterior point?
  a) one   b) two   c) infinite   d) zero

9. If the volume and the base area of a right circular cone are 48πcm³ and 12πcm² respectively, then the height of the cone is equal to_____.
  a) 6cm   b) 8cm   c) 10cm   d) 12cm

10. If the radius of a sphere is half of the radius of another sphere, then their respective volumes are in the ratio_____.
  a) 1:8   b) 2:1   c) 1:2   d) 8:1

II. Answer any six of the following: 6x2=12

11. Find the volume of a cylinder whose height is 2m and whose base area is 250m².

12. If the base area of a hemispherical solid is 1386 sq.m then find its total surface area.

13. If the volumes of two cones of same base radius are 3600cm³ and 5040cm³, find the ratio of heights.

14. The radius and height of a cylinder are in the ratio 2:7. If the curved surface area of the cylinder is 352cm². Find its radius.

15. An aluminium sphere of radius 12cm is melted to make a cylinder of radius 8cm. Find the height of the cylinder.

16. In the figure AD is the bisector of $\angle$A. If BD=4cm, DC=3cm and AB=6cm, find AC.

17. In Δ ABC, D and E are points on the sides AB and AC respectively. For each of the following case show that DE||BC if AB=5.6cm, AD=1.4cm, AC=7.2cm and AE=1.8cm.

18. If the total surface area of a solid hemisphere is 12πcm², then find its curved surface area.

III. Answer any four of the following: (Q.No.24 compulsory)   4x5=20

19. The prustum shaped outer portion of the table lamp has to be painted including the top part. Find the total cost of painting the lamp if the cost of painting 1sq.cm is ₹ 2.

20. A toy in the shape of a cylinder surmounted by a hemisphere. The height of the toy is 25cm. Find the total surface area of the toy if its common diameter is 12cm.

21. The internal and external diameter of a hollow hemispherical shell are 6cm and 10cm respectively. If it is melted and recast into a solid cylinder of diameter 14cm, then find the height of the cylinder.

22. A capsule is in the shape of a cylinder with two hemisphere stuck to each of its ends. If the length of the entire capsule is 12mm and the diameter of the capsule in 3mm, how much medicine it can hold?

23. ABCD is a quadrilateral in which AB=AD, the bisector of $\angle$BAC and $\angle$CAD intersect the sides BC and CD at the points E and F respectively. Prove that EF || BD.

24. State and prove Angle Bisector Theorem.

IV. Answer the following: 1x8=8

25. Construct a Δ PQR such that QR=6.5cm, $\angle$P=60° and the altitude from P to QR is of length 4.5cm.

I. Answer the following: 6x1=6

1. The wiring in a house consists of _____ circuits.

2. SI unit of resistance is _____.

   a) mho   b) joule   c) ohm   d) ohm meter

3. _____ is the minimum time interval between the original
   sound and an echo.

4. Say True or False:

   Waves created by earth quake are Infrasonic.

5. The velocity of sound in air at a particular temperature is
   $330ms^{-1}$. What will be its value when temperature is doubled
   and the pressure is halved?

   a) $330ms^{-1}$ b) $165ms^{-1}$ c) $330 \times \sqrt{2}$ ms^{-1} d) $320/\sqrt{2}$ ms^{-1}

6. Draw the symbol of Rheostat.

II. Answer any seven in short: 7x2=14

7. Give any two differences between series and parallel
   circuit.

8. What happens to the resistance, as the conductor is made
    thicker?

9. Calculate the resistance of a conductor through which a
   current of 2A passes, when the potential difference between its
   ends is 30v.

10. Define one volt.

11. What is the audible range of frequency?

12. A sound wave has a frequency of 200 Hz and a speed of
    $400ms^{-1}$ in a medium. Find the wavelength of the sound wave.

13. Suppose that a sound wave and a light wave have the same
    frequency then which one has a longer wavelength?

    a) sound   b) light c) both a and b d) data not sufficient

14. What is an echo?

15. Define particle velocity.

III. Answer any four in brief: 4x4=16

16. A man is standing between two vertical walls 680m apart. He
    claps his hands and hears two distinct echoes after 0.9
    seconds and 1.1 second respectively. What is the speed of
    sound in the air?

17. What is the role of the earth wire in domestic circuits?

18. Write the difference between sound and light waves.

19. A 100 watt electric bulb is used for 5 hours daily and four 60
    watt bulbs are used for 5 hours daily. Calculate the energy
    consumed (in KWh) in the month of January.

20. List the merits of LED bulb.

21. Define Infrasonic waves and ultrasonic waves.

IV. Answer any two of the following in detail: 2x7=14

22. What are the factors that affect the speed of sound in gases?

23. Explain about domestic electric circuits.

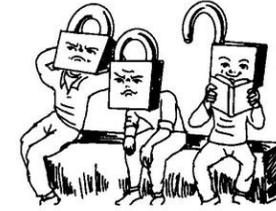24. Write the application of heating effect.

I. பலவுள் தெரிக:　　　　　　　　　　　　　　　　　　　　7x1=7

1. வேர்க்கடலை, மிளகாய் விதை, மாங்கொட்டை ஆகியவற்றைக் குறிக்கும் பயிர் வகை _____.
　அ) குலைவகை　　　　　　　　ஆ) மணிவகை
　இ) கொழுந்து வகை　　　　　　ஈ) இலை வகை

2. ஒரு சொல் தனித்து நின்று பொருள் தருவது _____ எனப்படும்.
　அ) தனிமொழி　　　　　　　　ஆ) தொடர்மொழி
　இ) பொதுமொழி　　　　　　　ஈ) வருமொழி

3. எந்தமிழ்நா என்பதைப் பிரித்தால் இவ்வாறு வரும்.
　அ) எந் + தமிழ் + நா　　　　ஆ) எந்த + தமிழ் + நா
　இ) எம் + தமிழ் + நா　　　　ஈ) எந்தம் + தமிழ் + நா

4. சிலம்புச் செல்வர் எனப் போற்றப்படுபவர் _____.
　அ) உ.வே.சா　　ஆ) ம.பொ.சி　　இ) திரு.வி.க　　ஈ) இளங்கோவடிகள்

5. இருநாட்டு அரசர்களும் தும்பைப் பூவைச் சூடிப் போரிடுவதன் காரணம் _____.
　அ) நாட்டைக் கைப்பற்றல்　　　ஆ) ஆ நிரை கவர்தல்
　இ) கோட்டையை முற்றுகையிடல்　ஈ) வலிமையை நிலைநாட்டல்

6. தன் நாட்டு மக்களுக்குத் தந்தையும் தாயும் மகனுமாக இருந்த அரசன் என்னும் மெய்க் கீர்த்தித் தொடர் உணர்த்தும் பொருள் _____.
　அ) நெறியோடு நின்று காவல் காப்பவர்
　ஆ) பண்பட்ட மனிதநேயம் கொண்டவர்
　இ) மிகுந்த செல்வம் உடையவர்
　ஈ) மேம்பட்ட நிருவாகத்திறன் பெற்றவர்

7. 'மாமலர்' என்பதன் இலக்கணக் குறிப்பு.
　அ) உருவகம்　　　　　　　　ஆ) உரிச் சொற்றொடர்
　இ) உவமைத் தொகை　　　　　ஈ) பண்புத் தொகை

II. சுருக்கமான விடையளி:　　　　　　　　　　　　　　5x1=5

8. பொதுமொழிக்குச் சான்று தருக.

9. கலைச் சொல் எழுதுக.
　அ) Consonant　　　　　　　ஆ) Guild

10. ஊர்ப்பெயர்களின் மரூஉவை எழுதுக.
　அ) கும்பகோணம்　　　　　　ஆ) மயிலாப்பூர்

11. வந்தவர் - என்பதன் பகுதியை எழுதுக.

12. தொகைச் சொல்லை விரித்தெழுதுக.
　அறுசுவை

III. கீழ்க்காணும் வினாக்களுள் எவையேனும் நான்கினை எழுதுக.　　4x2=8

13. எட்டுத் தொகை நூல்கள் யாவை?

14. பூவின் நிலைகளைக் குறிக்கும் சொற்கள் யாவை?

15. தற்கால உரைநடையில் சிலேடை அமையும் நயத்திற்கு ஓர் எடுத்துக்காட்டு தருக.

16. வறுமையிலும் படிப்பின் மீது நாட்டம் கொண்டவர் ம.பொ.சி என்பதற்குச் சான்று தருக.

17. மெய்க்கீர்த்தி யார் காலந்தொட்டு வளர்ந்தது?

18. சிலம்பு உணர்த்தும் முப்பெரும் உண்மைகள் யாவை?

IV. கீழ்க்காணும் வினாக்களுள் எவையேனும் மூன்றனுக்கு விடையளி:　3x3=9

19. தமிழன்னையை வாழ்த்துவதற்கான காரணங்களாகப் பாவலரேறு சுட்டுவன யாவை?

20. 'புளியங்கன்று ஆழமாக நடப்பட்டுள்ளது' இதுபோல் இளம் பயிர்வகை ஐந்தின் பெயர்களைத் தொடர்களில் அமைக்க.

21. 'தலையைக் கொடுத்தேனும் தலைநகரைக் காப்போம்' - இடம் சுட்டிப் பொருள் விளக்குக.

22. பாசவர், வாசவர், பல் நிண விலைஞர், உமணர் - சிலப்பதிகாரம் காட்டும் இவ்வணிகர்கள் யாவர்?

V. கீழ்க்காணும் வினாக்களுள் எவையேனும் மூன்றனுக்கு விடையளி:
　(24-வது வினாவிற்கு கட்டாயமாக விடையளி) :　　　　　3x5=15

23. பகர்வனர் திரிதிரு நகர வீதியும்
　பட்டினும் மயிரினும் பருத்தி நூலினும்
　கட்டு நுண்வனை காருகர் இருக்கையும்
　தூசும் துகிரும் ஆரமும் அகிலும்
　அ) இவ்வடிகள் இடம் பெற்ற நூல் எது?
　ஆ) பாடலில் அமைந்த மோனையை எடுத்து எழுதுக.
　இ) காருகர் - பொருள் தருக.
　ஈ) இப்பாடலில் காணப்படும் நறுமணப் பொருட்கள் யாவை?
　உ) எதுகைச் சொற்களை எழுதுக.

24. படத்தைப் பார்த்து 5 வரிகள் எழுதுக.

25. 'அன்னை மொழியே' - எனத் தொடங்கும் பாடலை அடிபிறழாமல் எழுதுக.

26. நாளிதழ் ஒன்றின் பொங்கல் மலரில் 'உழவுத் தொழிலுக்கு வந்தனை செய்வோம்' என்ற உங்கள் கட்டுரையை வெளியிட வேண்டி, அந்நாளிதழ் ஆசிரியருக்குக் கடிதம் எழுதுக.

VI. கீழ்க்காணும் வினாக்களுள் எவையேனும் ஒன்றனுக்கு விடையளி:　1x6=6

27. தமிழின் சொல் வளம் பற்றியும் புதிய சொல்லாக்கத்திற்கான தேவை குறித்தும் தமிழ் மன்றத்தில் பேசுவதற்கான உரைக் குறிப்புகளை எழுதுக.

28. சிலப்பதிகார மருவூர்ப்பாக்க வணிக வீதிகளை இக்கால வணிக வளாகங்களோடும் அங்காடிகளோடும் ஒப்பிட்டு எழுதுக.

29. 'மங்கையராய்ப் பிறப்பதற்கே' என்ற துணைப் பாடத்தின் வாயிலாக முன்னேற்றம் அடைந்த சிலரின் வாழ்வியல் நிகழ்வுகளை எழுதுக.

I. Choose the correct answer: 6x1=6

1. Light reaction takes place in _____.

   a) grana   b) stroma   c) cell membrane d) Mitochondria

2. The exarch condition is the characteristic feature of

   a) stem   b) root   c) leaves   d) flower

3. In the islets of Langerhans, beta cells secrete _____.

   a) glucagon   b) glycogen   c) insulin   d) thyroxine

4. The hormone which has positive effect on apical dominance

   is _____.

   a) cytokinin   b) auxin   c) gibberelin d) ethylene

5. Soil erosion can be prevented by

   a) deforestation   b) afforesation

   c) over growing   d) removal of vegetation

6. Global warming will cause _____.

   a) raise in level of oceans   b) melting of glaciers

   c) sinking of islands   d) all of these

II. Answer any five of the following in short: 5x2=10

7. What are the agents of soil erosion?

8. Write any two advantages of solar energy.

9. What is bolting?

10. What is Richmond Lang effect?

11. Where does Photosynthesis occur?

12. Draw the structure of mitochondria and label the parts.

13. Say true or false and correct the false statement (if any).

   a) Phloem tissue is involved in the transport of water in plant.

   b) Pituitary gland is divided into two lobes.

III. Answer any five of the following in brief: 5x4=20

14. Write any four functions of Tissue system.

15. a) What is respiratory quotient?

    b) What is Anaerobic respiration?

16. Write the physiological effects of Auxins.

17. Write any four functions of Thyroid Hormone.

18. How does rain water harvesting structure recharge ground water?

19. What are the advantages of using biogas?

20. Write the methods of solid wastes disposal and explain.

IV. Answer any two of the following in detail: 2x7=14

21. Enumerate the importance of forest.

22. Where are oestrogens produced? What is the role of oestrogens in the human body?

23. Describe and name three stages of cellular respiration that aerobic organisms use to obtain energy from glucose.

I. Choose the correct answer: 7x1=7

1. Who said imperialism is the highest stage of capitalism"?
   a) Lenin   b) Marx   c) Sun-Yat - Sen d) Mao Tsetung

2. What is the Battle of Marne remembered for?
   a) air warfare   b) trench warfare
   c) submarine warfare   d) ship warfare

3. Who was arrested during the Anti-Rowlatt protests in Amritsar?
   a) Motilal Nehru   b) Saifuddin Kitchlew
   c) Mohammed Ali   d) Rajkumar Shukla

4. When was the first forest act enacted?
   a) 1858   b) 1911   c) 1865   d) 1936

5. A foreigner can anquire Indian citizenship through
   a) Descent   b) Registration
   c) Naturalisation   d) All of the above

6. _____ extended assistance through its public law 480.
   a) United States of America   b) India
   c) Singapore   d) UK

7. _____ is the only state in India to adopt universal PDS.
   a) Kerala   b) Andhra Pradesh
   c) Tamil Nadu   d) Karnataka

II. Fill in the blanks: 5x1=5

8. In the battle of Tanneberg _____suffered heavy losses.
9. Khilafat movement was led by _____.
10. _____ coined the term 'Pakistan'.
11. _____ writs are mentioned in Article 32.
12. _____ is an important indicator of nutrition deficiency.

III. Match the following: 5x1=5

13. Non Cooperation Movement -   Direct Action Day
14. Government of India Act, 1919-   Supply of quality goods
15. 16th August 1946   -   Dyarchy
16. Consumer cooperatives   -   Least poor region
17. Kerala   -   Surrender of titles

IV. Answer any two of the following captions: 2x4=8

18. Balkan Wars
   a) Why was Balkan League formed?
   b) What was the outcome of the first Balkan War?
   c) Who were defeated in this war?
   d) What was the name of the treaty signed at the end of this second Balkan War?

19. Gandhi and Mass Nationalism
   a) Which incident considered a turning point in the life of Gandhi?
   b) Name the works that influenced Gandhi
   c) How did Gandhi use Satyagrah as a strategy in South Africa?
   d) What do you know about the Champaran Satyagraha?

20. Subhas Chandra Bose and INA
   a) How did Subhas Chandra Bose reach Japan?
   b) Who headed the women wing of Indian National Army?
   c) How did Subhash Chandra Bose reorganize the INA?
   d) Name the slogan provided by Subhash Chandra Bose.

V. Answer any six of the following in brief: 6x2=12

21. Name the countries in the Triple Entente.
22. List out any two causes for the failure of the League of Nations.
23. Describe the Jallianwala Bagh Massacre.
24. Why did Gandhiji withdraw the Non-Cooperation movement?
25. What is poorna swaraj?
26. What is a constitution?
27. What are the classical languages in India?
28. Define food security according to FAO.
29. Write a short note on purchasing power.

VI. Answer any two of the following in detail: 2x4=8

30. Discuss the main causes of the first World War.
31. Critically examine the Civil Disobedience movement as the typical example of Gandhi and movement.
32. Write briefly on the Right to Constitutional Remedies.
33. Briefly explain the nutritional and health status of Tamil Nadu.

VII. Timeline: 1x5=5

34. Draw a timeline from 1900 to 1930 (any five important events)

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I. Choose the correct answer:

1. On 8th January 1933 which day was observed?
   a) Temple Entry Day   b) Day of Deliverance
   c) Direct Action Day   d) Independence Day

2. Where was Gandhi, When India attained Independence on 15th
   August 1947?
   a) New Delhi   b) Ahmedabad   c) Wardha   d) Noakhali

II. Fill in the blanks:

8. Gandhi regarded _____ as his political Guru.

IV. Answer any two of the following captions:

18. Constructive programme of Gandhi
a) What is Constructive programme?
b) What did Gandhi exhort the congressmen to do?
c) How did Gandhi try to bring about Hindu Muslim unity?
d) What is the contribution of Gandhi towards abolition of
   untouchability?

V. Answer any six of the following in brief:

21. Why was Simon Commission boycotted?
22. What was the conflict between the Swarajists and no changers?

VI. Answer any two of the following in detail:

30. Discuss the reasons behind the partition of India.