LSOFT TECHNOLOGIES, PUNE

Presents

Special OMR PENS available

XI, XII, MHT-CET, JEE-MAINS, NEET / AIPMT POSTAL TEST SERIES

LSOFT

Technologies

ISO 9001 : 2008 Certified

LSOFT TECHNOLOGIES, PUNE

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To,

Respected Parents / Students,

      The world is moving ahead very fast and technology is accelerating this speed. If we do not adopt new technology, we may lag behind the world. The students, especially from the rural area are not introduced to new technology at the right time. That gives a sense of inferiority complex to them. I, being from the rural area, know this fact very well. So I decided to introduce technology to the rural as well as urban students through educational software in 2002. That was the beginning of Lsoft Technologies.

      Now a days tremendous changes are taking place in the education pattern as well as systems of regular examinations. Competitive examinations are being held by different government and private organizations. So far only the students at urban level were getting this update. However, we have now extended our scope of activities from urban level to rural level covering small villages too. Our aim is to update students in rural areas about the prevailing status in the education field so that instead of outdated systems, they can get the education in accordance with the new technique.

      In order to achieve our goal, we have come up with state of the art Test series that will enhance student performance in the final exam. Test series will help students to improve their confidence level, time management skill and make them able to analyze self performance.

      Honesty and sincerity are the two virtues we have been following since the inception of Lsoft Technologies and our achievements speak for the rewards we got by these virtues.

      We assure you that we will keep on doing the quality work in the future also and hope to get the same kind of support from you all.

Thanking you,

Amol Bijwe,
Director,
Lsoft Technologies, Pune
Email: admin@Lsoft.co

ABOUT LSOFT TECHNOLOGIES

VISION

To revolutionize the education sector using the latest Information Technology.

MISSION

To deliver high quality educational products and services.

GOAL

To be the leading solution provider in the education sector.

ABOUT US

Lsoft Technologies is an **ISO 9001:2008** certified company functional in educational arena for last 12 years. It was **incorporated in 2002** with a mission to create state of the art software solutions for domestic as well as international markets using the latest Information Technology to revolutionize the education sector.

CORPORATE PROFILE

Lsoft Technologies is run by young and dynamic Engineers, Management Graduates and Academicians. It combines strong management and infrastructure resources with state of the art technology and a highly skilled and versatile workforce of dedicated software professionals to conceptualize, design, develop and market software solutions for demanding and quality conscious customers.

ACHIEVEMENTS

Within a short period of 12 years, Lsoft Technologies has carved a niche for itself in the fiercely competitive market. It has become the leading educational solutions provider in Maharashtra and neighbouring states. Lsoft has developed a range of quality products for the educational institutes and students and created strong brand image through efficient service and customer satisfaction. In 2011, Lsoft was honored by BIG Brands Research **Excellence Service Award** for its quality services in education sector. Lsoft has designed products both for domestic as well as international markets with its presence in Maharashtra, Goa, Gujarat, M. P., A. P., West Bengal etc. This proves its capabilities and long term commitment to Education Sector.

LSOFT POSTAL TEST SERIES (MHT-CET & JEE-MAIN)

Lsoft Technologies is the only organization focused on **OMR** assessments services. Lsoft is an independent, unbiased and self regulated organization which provides education assessment and bench-marking on the National level for different competitive examinations through **OMR** assessments. Lsoft helps students preparing for different exams by giving them number of tests and subsequently providing feedback about their performance on National Level.

SALIENT FEATURES

- Question papers designed by **experienced and renowned professors** as per MHT-CET, JEE-MAIN and AIPMT / NEET examination standards.

- **OMR Answer Sheet** for every test as per JEE-MAIN and MHT-CET / AIPMT / NEET standards.

- Test series includes **Chapter wise, Group wise and Full portion** tests **with** Hints & Solutions.

- Complete **Analysis Report** of your performance in all tests with **Maharashtra Ranking.**

- You can solve the tests as per your **convenience, time and syllabus covered in the class at your destination.**

TEST SERIES DETAILS

JEE-MAIN / NEET / AIPMT TEST SERIES PACKAGE

TEST DETAILS	PHY	CHEM	MATHS	BIO	PCM	PCB
XI-CHAPTER WISE	14	17	20	14	51	45
XII-CHAPTER WISE	20	16	20	19	56	55

MHT-CET TEST SERIES PACKAGE

TEST DETAILS	PHY	CHEM	MATHS	BIO	PCM	PCB	PCMB
XII-CHAPTER WISE	20	16	18	19	54	55	73
REVISION TESTS	5	5	5	5	15	15	20
FULL PORTION TESTS	5	5	5	5	15	15	20
TOTAL NO. OF TESTS WITH OMR	30	26	28	29	**84**	**85**	**113**

JEE-MAIN TEST SERIES FAST-TRACT PACKAGE

TEST DETAILS	PHY	CHEM	MATHS	BIO	PCM	PCB
CHAPTER WISE	20	20	20	-	60	-
FULL PORTION TESTS	10	10	10	-	30	-
TOTAL NO. OF TESTS WITH OMR	30	30	30	-	**90**	-

AIPMT / NEET TEST SERIES FAST-TRACT PACKAGE

TEST DETAILS	PHY	CHEM	MATHS	BIO	PCM	PCB
CHAPTER WISE	15	15	-	15	-	45
REVISION TESTS	10	10	-	10	-	30
FULL PORTION TESTS	5	5	-	5	-	15
TOTAL NO. OF TESTS WITH OMR	30	30	-	30	-	**90**

More than 500 educational organizations are getting benefitted from our software and Services.

EXCLUSIVE BENEFITS TO THE STUDENTS

BENEFITS FROM QUESTION PAPER SOLVING

- **REDUCES FEAR OF JEE-MAINS / MH-CET EXAM –** By following final examination pattern throughout the year, students will get rid of final examination fear.

- **IMPROVES CONFIDENCE LEVEL –** By regular test practice, student's confidence will improve remarkably.

- **IMPROVES KNOWLEDGE –** Regular solving of question papers helps to improve knowledge.

- **IMPROVES TIME MANAGEMENT SKILL –** Help students to improve time management skill and also help them to complete every question in predefined time limit.

- **BUILDS POSITIVE ATTITUDE.**

BENEFITS OF USING OMR ANSWER SHEET

- **IMPROVES AWARENESS–** Helps to know what is Version Number, Booklet Number, Test Number and what is their importance and how to fill them on OMR Answer Sheets.

- **IMPROVES QUALITY & ACCURACY –** Quality and accuracy are important factors while filling circles of OMR sheet and this test series helps students to be expertised.

- **RELIEVES STRESS –** Many times different types of OMR Sheets create stress and confusion in student's mind. The regular practice helps them to overcome stress and confusion.

BENEFITS FROM ALL REPORTS

- **FINDING WEAKNESS –** Reports provided post OMR answer sheet assessment, help students to find out their weakness (Weak Subject, Chapter etc)

- **FINDING OUT TECHNICAL MISTAKES –** Usually students make many mistakes while filling OMR answer sheets, OMR reports help students to identify their mistakes and correct them which indirectly help them to improve their final score.

- **INCREASES COMPETITIVENESS –** Ranking reports help students to know where they stand which improve competitiveness.

- **SELF ASSESSMENT –** Performance Reports help students to assess their own performance.

Each test will be followed by detailed performance analysis report, which will highlight strong and weak points of a student. Student will also be able to compare subject-wise aggregate score with topper as well as average score. Last five tests are designed exactly same as JEE-MAINS and MH-CET / AIPMT final examination pattern.

IDEAL PROGRAM FOR STUDENTS WHO INTEND TO GET PREPARED FOR COMPETITIVE EXAMS.

LSOFT TEST SERIES

EXAM NAME : JEE (MAIN)

Topic Names: Circular motion

Test Number		Test Booklet No.
000001		**110001**
Write/Check this Code on your Answer Sheet		Write this number on your Answer Sheet

: IMPORTANT INSTRUCTIONS :

01. Immediately fill in the particulars on this page of the Test Booklet with **Blue/Black Ball point Pen. Use of pencil is strictly prohibited.**

02. The Answer Sheet is kept inside this Test Booklet. When you are directed to open the Test Booklet, take out the Answer Sheet and fill in the particulars carefully.

03. The test is of 60 **Min.** duration.

04. The Test Booklet consists of **30** questions. The maximum marks are **120**. All the Ques. consists of **FOUR (4)** marks each.

05. **PHYSICS- 30 Ques. (120 marks).**

06. Candidates will be awarded marks as stated above in Instruction No.5 for correct response of each question. ¼ (one-fourth) marks will be deducted for indicating incorrect response of each question. **No deduction** from the total score will be made **if no response** is indicated for an item in the Answer Sheet.

07. Use **Blue/Black Ball Point Pen only** for writing particulars/marking responses on **Side-1** and **Side-2** of the Answer Sheet. **Use of pencil is strictly prohibited.**

08. No candidate is allowed to carry any textual material, printed or written, bits of papers, pager, mobile phone, any electronic device, etc., except the Admit Card inside the examination hall/room.

09. Rough work is to be done on the space provided for this purpose in the Test Booklet only. This space is given at the bottom of each page of the booklet.

10. On completion of the test, the candidate must hand over the Answer Sheet to the Invigilator on duty in the Room/Hall. **However, the candidates are allowed to take away this Test Booklet with them.**

11. The CODE for this Booklet is **A**. Make Sure that the CODE printed on **Side-2** of the Answer Sheet is the same as that on this booklet. In case of discrepancy, the candidate should immediately report the matter to the Invigilator for replacement of both the Test Booklet and the Answer Sheet.

12. Do not fold or make any stray marks on the Answer Sheet.

13. No part of the Test Booklet and Answer Sheet shall be detached under any circumstances.

Name of the Candidate   :

Roll Number : In figures :

In words :

Examination Centre Number :

Name of Examination Centre (in Capital letters) :

Candidate's Signature :   Invigilator's Signature :

1. The angle turned by a body undergoing circular motion depends on time as $\theta = \theta_0 + \theta_1 t + \theta_2 t^2$. Then the angular acceleration of the body is
(1) θ_1
(2) θ_2
(3) $2\theta_1$
(4) $2\theta_2$

2. The maximum and minimum tension in the string whirling in a circle of radius 2.5 m with constant velocity are in the ratio 5 : 3 then its velocity is
(1) 7 m / s
(2) $\sqrt{98}$ m / s
(3) $\sqrt{4.9}$
(4) $\sqrt{490}$ m / s

3. A bucket full of water is revolved in vertical circle of radius 2m. What should be the maximum time-period of revolution so that the water doesn't fall off the bucket
(1) 1 sec
(2) 2 sec
(3) 3 sec
(4) 6 sec

4. The coordinates of a moving particle at any time 't' are given by x = αt^3 and y = βt^3. The speed of the particle at time 't' is given by
(1) $\sqrt{\alpha^2 + \beta^2}$
(2) $t^2 \sqrt{\alpha^2 + \beta^2}$
(3) $3t^2 \sqrt{\alpha^2 + \beta^2}$
(4) $3t \sqrt{\alpha^2 + \beta^2}$

5. A simple pendulum oscillates in a vertical plane. When it passes through the mean position, the tension in the string is 3 times the weight of the pendulum bob. What is the maximum displacement of the pendulum of the string with respect to the vertical
(1) 10°
(2) 45°
(3) 60°
(4) 90°

6. A stone of mass m is tied to a string and is moved in a vertical circle of radius r making n revolutions per minute. The total tension in the string when the stone is at its lowest point is
(1) mg
(2) $m(g + \pi n r)$
(3) $m(g + \pi n r^2)$
(4) $m\{g + (\pi^2 n^2 r) / 900\}$

7. A stone tied with a string, is rotated in a vertical circle. The minimum speed with which the string has to be rotated
(1) Is independent of the length of the string
(2) Is independent of the mass of the stone
(3) Decreases with increasing in length of the string
(4) Decreases with increasing mass of the stone

8. A fan is making 600 revolutions per minute. If after some time it makes 1200 revolutions per minute, then increase in its angular velocity is
(1) 10π rad / sec
(2) 20π rad / sec
(3) 40π rad / sec
(4) 50π rad / sec

9. The tension in the string revolving in a vertical circle with a mass m at the end which is at the lowest position
(1) mg
(2) $\dfrac{mv^2}{r} + mg$
(3) $\dfrac{mv^2}{r} - mg$
(4) $\dfrac{mv^2}{r}$

10. If the equation for the displacement of a particle moving on a circular path is given by $(\theta) = 2t^3 + 0.5$, where θ is in radians and t in seconds, then the angular velocity of the particle after 2 sec from its start is
(1) 8 rad/sec
(2) 12 rad/sec
(3) 24 rad/sec
(4) 48 rad/sec

11. A weightless thread can bear tension upto 3.7 kg wt. A stone of mass 500 gms is tied to it and revolved in a circular path of radius 4 m in a vertical plane. If $g = 10 \text{ms}^{-2}$, then the maximum angular velocity of the stone will be
(1) 2 radians/sec
(2) $\sqrt{21}$ radians/sec
(3) 16 radians/sec
(4) 4 radians/sec

12. A weightless thread can support tension upto 30 N. A stone of mass 0.5 kg is tied to it and is revolved in a circular path of radius 2 m in a vertical plane. If $g = 10 \text{m} / \text{s}^2$, then the maximum angular velocity of the stone will be
(1) 10 rad / s
(2) $\sqrt{60}$ rad / s
(3) $\sqrt{30}$ rad / s
(4) 5 rad / s

13. A 2 kg stone at the end of a string 1 m long is whirled in a vertical circle at a constant speed. The speed of the stone is 4 m/sec. The tension in the string will be 52 N, when the stone is
(1) Halfway down
(2) At the bottom of the circle
(3) At the top of the circle
(4) None of the above

14. A wheel is subjected to uniform angular acceleration about its axis. Initially its angular velocity is zero. In the first 2 sec, it rotates through an angle θ_1. In the next 2 sec, it rotates through an additional angle θ_2. The ratio of θ_2 / θ_1 is
(1) 1   (2) 2
(3) 3   (4) 4

15. In a circus stuntman rides a motorbike in a circular track of radius R in the vertical plane. The minimum speed at highest point of track will be
(1) $2gR$ (2) $\sqrt{2gR}$
(3) $\sqrt{gR}$ (4) $\sqrt{3gR}$

16. If the length of the second's hand in a stop clock is 3 cm the angular velocity and linear velocity of the tip is
(1) 0.2547 rad/sec., 0.314 m/sec
(2) 0.2047 rad/sec., 0.0314 m/sec
(3) 0.1047 rad/sec., 0.00314 m/sec
(4) 0.1472 rad/sec., 0.06314 m/sec

17. In 1.0 s, a particle goes from point A to point B, moving in a semicircle of radius 1.0 m (see figure). The magnitude of the average velocity is
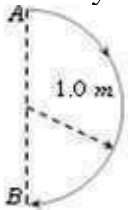
(1) Zero   (2) 1.0 m/s
(3) 2.0 m/s   (4) 3.14 m/s

18. A person with his hands in his pockets is skating on ice at the velocity of 10 m/s and describes a circle of radius 50 m. What is his inclination with vertical
(1) $\tan^{-1}\left(\dfrac{1}{5}\right)$ (2) $\tan^{-1}(1)$
(3) $\tan^{-1}\left(\dfrac{3}{5}\right)$ (4) $\tan^{-1}\left(\dfrac{1}{10}\right)$

19. A bob of mass 10 kg is attached to wire 0.3 m long. Its breaking stress is 4.8×10^7 N/m². The area of cross section of the wire is 10^{-6} m². The maximum angular velocity with which it can be rotated in a horizontal circle
(1) 1 rad/sec   (2) 2 rad/sec
(3) 4 rad/sec   (4) 8 rad/sec

20. A cyclist goes round a circular path of circumference 34.3 m in $\sqrt{22}$ sec. the angle made by him, with the vertical, will be
(1) 40°   (2) 45°
(3) 48°   (4) 42°

21. If a particle covers half the circle of radius R with constant speed then
(1) Change in K.E. is zero
(2) Change in K.E. is mv²
(3) Change in K.E. is 1/2 mv²
(4) Momentum change is mvr

22. A wheel completes 2000 revolutions to cover the 9.5 km. distance. then the diameter of the wheel is
(1) 1.5 cm   (2) 1.5 m
(3) 7.5 m   (4) 7.5 cm

23. If a particle of mass m is moving in a horizontal circle of radius r with a centripetal force $(-k/r^2)$, the total energy is
(1) $-\dfrac{k}{r}$ (2) $-\dfrac{k}{2r}$
(3) $-\dfrac{4k}{r}$ (4) $-\dfrac{2k}{r}$

24. Radius of the curved road on national highway is R. Width of the road is b. The outer edge of the road is raised by h with respect to inner edge so that a car with velocity v can pass safe over it. The value of h is
(1) $\dfrac{v}{Rgb}$ (2) $\dfrac{v^2 b}{Rg}$
(3) $\dfrac{v^2 b}{R}$ (4) $\dfrac{v^2 R}{g}$

25. A particle of mass m is executing uniform circular motion on a path of radius r. If p is the magnitude of its linear momentum. The radial force acting on the particle is
(1) $\dfrac{rm}{p}$ (2) pmr
(3) $\dfrac{p^2}{rm}$ (4) $\dfrac{mp^2}{r}$

26. The length of second's hand in a watch is 1 cm. The change in velocity of its tip in 15 seconds is
(1) $\dfrac{\pi\sqrt{2}}{30}$ cm/sec   (2) $\dfrac{\pi}{30}$ cm/sec
(3) $\dfrac{\pi}{30\sqrt{2}}$ cm/sec   (4) Zero

27. A car is moving on a circular path and takes a turn. If R_1 and R_2 be the reactions on the inner and outer wheels respectively, then

(1) $R_1 \geq R_2$

(2) $R_1 > R_2$

(3) $R_1 < R_2$

(4) $R_1 = R_2$

28. Two bodies of mass 10 kg and 5 kg moving in concentric orbits of radii R and r such that their periods are the same. Then the ratio between their centripetal acceleration is

(1) r/R

(2) R/r

(3) r^2/R^2

(4) R^2/r^2

29. A particle P is moving in a circle of radius 'a' with a uniform speed v. C is the centre of the circle and AB is a diameter. When passing through B the angular velocity of P about A and C are in the ratio

(1) $1 : 1$

(2) $1 : 2$

(3) $2 : 1$

(4) $4 : 1$

30. Two racing cars of masses m_1 and m_2 are moving in circles of radii r_1 and r_2 respectively. Their speeds are such that each makes a complete circle in the same duration of time t. The ratio of the angular speed of the first to the second car is

(1) $r_1 : r_2$

(2) $m_1 : m_2$

(3) $m_1 r_1 : m_2 r_2$

(4) $1 : 1$

1. Ans: (4) $2\theta_2$

Sol: Angular acceleration $= \dfrac{d^2\theta}{dt^2} = 2\theta_2$

2. Ans: (2) $\sqrt{98}$ m / s

Sol: In this problem it is assumed that particle although moving in a vertical loop but its speed remain constant.

Tension at lowest point $T_{max} = \dfrac{mv^2}{r} + mg$

Tension at highest point $T_{min} = \dfrac{mv^2}{r} - mg$

$$\dfrac{T_{max}}{T_{min}} = \dfrac{\dfrac{mv^2}{r} + mg}{\dfrac{mv^2}{r} - mg} = \dfrac{5}{3}$$

by solving we get, $v = \sqrt{4gr} = \sqrt{4 \times 9.8 \times 2.5}$

$= \sqrt{98}$ m/s

3. Ans: (3) 3 sec

Sol: Minimum angular velocity $\omega_{min} = \sqrt{g / R}$

$\therefore T_{max} = \dfrac{2\pi}{\omega_{min}} = 2\pi\sqrt{\dfrac{R}{g}} = 2\pi\sqrt{\dfrac{2}{10}} = 2\sqrt{2} \cong 3s$

4. Ans: (3) $3t^2\sqrt{\alpha^2 + \beta^2}$

Sol: $x = \alpha t^3$ and $y = \beta t^3$ (given)

$v_x = \dfrac{dx}{dt} = 3\alpha t^2$ and $v_y = \dfrac{dy}{dt} = 3\beta t^2$

Resultant velocity $= v = \sqrt{v_x^2 + v_y^2} = 3t^2\sqrt{\alpha^2 + \beta^2}$

5. Ans: (4) $90°$

Sol: Tension at mean position,

$mg + \dfrac{mv^2}{r} = 3mg$

$v = \sqrt{2gl}$ ...(i)

and if the body displaces by angle θ with the vertical then $v = \sqrt{2gl(1 - \cos\theta)}$ ...(ii)

Comparing (i) and (ii), $\cos\theta = 0 \Rightarrow \theta = 90°$

6. Ans: (4) $m\{g + (\pi^2 n^2 r) / 900\}$

Sol: $T = mg + m\omega^2 r = m\{g + 4\pi^2 n^2 r\}$

$= m\left\{g + \left(4\pi^2\left(\dfrac{n}{60}\right)^2 r\right)\right\} = m\left\{g + \left(\dfrac{\pi^2 n^2 r}{900}\right)\right\}$

7. Ans: (2) Is independent of the mass of the stone

Sol: Is independent of the mass of the stone

8. Ans: (2) 20π rad / sec

Sol: Increment in angular velocity

$\omega = 2\pi(n_2 - n_1)$

$\omega = 2\pi(1200 - 600)\dfrac{rad}{min} = \dfrac{2\pi \times 600}{60}\dfrac{rad}{s}$

$= 20\pi\dfrac{rad}{s}$

9. Ans: (2) $\dfrac{mv^2}{r} + mg$

Sol: Tension = Centrifugal force + weight

$= \dfrac{mv^2}{r} + mg$

10. Ans: (3) 24 rad/sec

Sol: $\omega = \dfrac{d\theta}{dt} = \dfrac{d}{dt}(2t^3 + 0.5) = 6t^2$

at t =2 s, $\omega = 6 \times (2)^2 = 24$ rad/s

11. Ans: (4) 4 radians/sec

Sol: Max. tension that string can bear = 3.7 $kgwt = 37N$

Tension at lowest point of vertical

loop $= mg + m\omega^2 r$

$\qquad = 0.5 \times 10 + 0.5 \times \omega^2 \times 4 = 5 + 2\omega^2$

$37 = 5 + 2w^2 \Rightarrow \omega = 4$ rad/s.

12. Ans: (4) 5 rad / s

Sol: $T_{max} = m\omega_{max}^2 r + mg \Rightarrow \dfrac{T_{max}}{m} = \omega^2 r + g$

$\Rightarrow \dfrac{30}{0.5} - 10 = \omega^2_{max} r \Rightarrow$

$\omega_{max} = \sqrt{\dfrac{50}{r}} = \sqrt{\dfrac{50}{2}} = 5$ rad / s

13. Ans: (2) At the bottom of the circle

Sol: $mg = 20N$ and $\dfrac{mv^2}{r} = \dfrac{2 \times (4)^2}{1} = 32N$

It is clear that 52 N tension will be at the bottom of the circle. Because we know that

$T_{Bottom} = mg + \dfrac{mv^2}{r}$

14. Ans: (3) 3

Sol: Using relation $\theta = \omega_0 t + \dfrac{1}{2}at^2$

$\theta_1 = \dfrac{1}{2}(\alpha)(2)^2 = 2\alpha \quad \ldots(i) \quad (\text{As } \omega_0 = 0, t = 2\sec)$

Now using same equation for t=4 sec, $\omega_0 = 0$

$\theta_1 + \theta_2 = \dfrac{1}{2}\alpha(4)^2 = 8\alpha \qquad \ldots(ii)$

From (i) and (ii), $\theta_1 = 2\alpha$ and $\theta_2 = 6\alpha$ $\quad \dfrac{\theta_2}{\theta_1} = 3$

15. Ans: (3) $\sqrt{gR}$

Sol: Minimum speed at the highest point of vertical circular path $v = \sqrt{gR}$

16. Ans: (3) 0.1047 rad/sec., 0.00314 m/sec

Sol: $\omega = \dfrac{2\pi}{T} = \dfrac{2\pi}{60} = 0.1047$ rad/s

and $v = \omega r = 0.1047 \times 3 \times 10^{-2} = 0.00314$ m/s

17. Ans: (3) 2.0 m / s

Sol: Average velocity

$= \dfrac{\text{Total displacement}}{\text{time}} = \dfrac{2\,\text{m}}{1s} = 2\,\text{ms}^{-1}$

18. Ans: (1) $\tan^{-1}\left(\dfrac{1}{5}\right)$

Sol: The inclination of person from vertical is given by,

$\tan\theta = \dfrac{v^2}{rg} = \dfrac{(10)^2}{50 \times 10} = \dfrac{1}{5} \quad \theta = \tan^{-1}(1/5)$

19. Ans: (3) 4 rad/sec

Sol: Centripetal force = breaking force

$\Rightarrow m\omega^2 r = $ breaking stress $\times$ cross sectional area

$\Rightarrow m\omega^2 r = p \times A \Rightarrow$

$\omega = \sqrt{\dfrac{p \times A}{mr}} = \sqrt{\dfrac{4.8 \times 10^7 \times 10^{-6}}{10 \times 0.3}}$
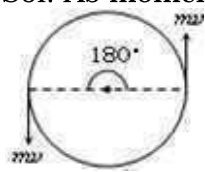
$\omega = 4\,\text{rad} / \sec$

20. Ans: (2) 45°

Sol: $2\pi r = 34.3 \Rightarrow r = \dfrac{34.3}{2\pi}$ and $v = \dfrac{2\pi r}{T} = \dfrac{2\pi r}{\sqrt{22}}$

Angle of binding $\theta = \tan^{-1}\left(\dfrac{v^2}{rg}\right) = 45°$

21. Ans: (1) Change in K.E. is zero

Sol: As momentum is vector quantity

change in momentum

$\Delta P = 2mv\sin(\theta/2) = 2mv\sin(90) = 2mv$

But kinetic energy remains always constant so change in kinetic energy is zero.

22. Ans: (2) 1.5 m

Sol: Distance covered in 'n' revolution = $n\,2\pi r$ = $n\pi D$

$\Rightarrow 2000\pi D = 9500$ [As $n = 2000$, distance =

$9500\,m$] $\Rightarrow D = \dfrac{9500}{2000 \times \pi} = 1.5\,\text{m}$

23. Ans: (2) $-\dfrac{k}{2r}$

Sol: $\dfrac{mv^2}{r} = \dfrac{k}{r^2} \Rightarrow mv^2 = \dfrac{k}{r}$ K.E.$= \dfrac{1}{2}mv^2 = \dfrac{k}{2r}$

P.E. $= \int F\,dr = \int \dfrac{k}{r^2}\,dr = -\dfrac{k}{r}$

Total energy = K.E. + P.E. $= \dfrac{k}{2r} - \dfrac{k}{r} = -\dfrac{k}{2r}$

24. Ans: (2) $\dfrac{v^2 b}{Rg}$

Sol: We know that $\tan\theta = \dfrac{v^2}{Rg}$ and $\tan\theta = \dfrac{h}{b}$

Hence $\dfrac{h}{b} = \dfrac{v^2}{Rg} \Rightarrow h = \dfrac{v^2 b}{Rg}$

25. Ans: (3) $\dfrac{p^2}{rm}$

Sol: Radial force $= \dfrac{mv^2}{r} = \dfrac{m}{r}\left(\dfrac{p}{m}\right)^2 = \dfrac{p^2}{mr}$ [As $p = mv$]

26. Ans: (1) $\dfrac{\pi\sqrt{2}}{30}$ cm / sec

Sol: In 15 second's hand rotate through 90°.

Change in velocity $\left|\overrightarrow{\Delta v}\right| = 2v\sin(\theta/2)$
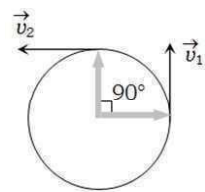
$= 2(r\omega)\sin(90°/2) = 2 \times 1 \times \dfrac{2\pi}{T} \times \dfrac{1}{\sqrt{2}}$

$= \dfrac{4\pi}{60\sqrt{2}} = \dfrac{\pi\sqrt{2}}{30}\dfrac{\text{cm}}{\text{sec}}$ [As $T = 60$ sec]

27. Ans: (3) $R_1 < R_2$

Sol: Reaction on inner wheel

$$R_1 = \frac{1}{2}M\left[g - \frac{v^2h}{ra}\right]$$

Reaction on outer wheel $R_2 = \frac{1}{2}M\left[g + \frac{v^2h}{ra}\right]$

where, r = radius of circular path, $2a$ = distance between two wheels and h = height of centre of gravity of car.

28. Ans: (2) R/r

Sol: $\dfrac{a_R}{a_r} = \dfrac{\omega_R^2 \times R}{\omega_r^2 \times r} = \dfrac{T_r^2}{T_R^2} \times \dfrac{R}{r} = \dfrac{R}{r}$　　　[As $T_r = T_R$]

29. Ans: (2) 1 : 2

Sol: Angular velocity of particle P about point A,
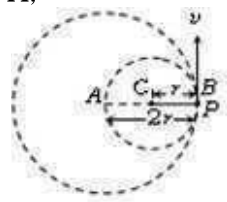
$$\omega_A = \frac{v}{r_{AB}} = \frac{v}{2r}$$

Angular velocity of particle P about point C,

$$\omega_C = \frac{v}{r_{BC}} = \frac{v}{r}$$

Ratio $\dfrac{\omega_A}{\omega_C} = \dfrac{v/2r}{v/r} = \dfrac{1}{2}$.

30. Ans: (4) 1 : 1

Sol: As time periods are equal therefore ratio of angular speeds will be same. $\omega = \dfrac{2\pi}{T}$

Lsoft Test Series

ROLL NUMBER (IN NUMERALS)

☐ ☐ ☐ ☐ ☐ ☐ ☐

ROLL NUMBER

NAME OF THE CANDIDATE (IN CAPITAL LETTERS)

FATHER'S NAME (IN CAPITAL LETTERS)

CENTRE NUMBER

CENTER OF EXAMINATION (IN CAPITAL LETTERS)

पष्ठ - २ पर उत्तर अंकित करन क लिय अनदश
INSTRUCTIONS FOR MARKING ON SIDE - 2

कवल नील/काल बाल पन स सही गाल का गहर निशान स भरिए ।
Use only Blue/Black Ball Point pen to Darken the appropriate Circle.

कृपया पर गाल का गहर निशान स भरिए।
Please darken the complete circle.

प्रत्यक प्रश्न का उत्तर कवल एक ही पर गाल म गहरा निशान लगाकर दीजिए जसा नीच दीखाया गया हा
Darken ONLY ONE CIRCLE for each Question as shown in below:

CORRECT METHOD	WRONG METHOD
① ● ③ ④	✔ ✗ ◖ ◗

किसी उत्तर क लिए एक बार गाल म निशान लगान क पश्चात काई परिवतन अनमान्य नही ह ।
No Change in the Answer once marked is allowed.

उत्तर पत्र पर अन्य कही काई निशान न लगाइए ।
Please do not make any mark on the Answer Sheet.

इस उत्तर पत्र पर कच्चा काम करना मना ह ।
Rough work must not be done on the Answer Sheet.

प्रत्यक प्रश्न का उत्तर, उत्तर पत्र म दिए गए क्रमाक क सामन सगत गाल म निशान लगा कर दीजिए ।
Mark your answer only in the appropriate circle, the number corresponding to the question.

EXAMPLES-
ROLL NUMBER IN WORDS (in running hand:) Two lakh fourteen thousand fifty seven

EXAMPLES- HOW TO FILL AND MARK ON SIDE - 2 (WITH BLUE/BLACK BALL POINT PEN ONLY)

If your Roll No. Is 0214057. Fill in as below:	If your Centre No. Is 0204 Fill in as below:	If your Test Booklet No. is 021405. Fill in as below:	If your response to Question Number 001 is (1). Please mark as below:	
ROLL NUMBER	**CENTRE NO.**	**BOOKLET NO.**		**IMPORTANT**

ROLL NUMBER:
0	2	1	4	0	5	7

CENTRE NO.:
0	2	0	4

BOOKLET NO.:
0	2	1	4	0	5

Q. No.   Response

001   ● ② ③ ④

Lsoft Test Series

NAME :

CODE :

ROLL NUMBER	CENTRE NO.	TEST BOOKLET NO.	EXAM NAME

JEE-MAINS

INSTRUCTIONS

CORRECT METHOD
① ② ③ ④

WRONG METHOD
⊗ ✔ ◖ ◗

001	031	061
002	032	062
003	033	063
004	034	064
005	035	065
006	036	066
007	037	067
008	038	068
009	039	069
010	040	070
011	041	071
012	042	072
013	043	073
014	044	074
015	045	075
016	046	076
017	047	077
018	048	078
019	049	079
020	050	080
021	051	081
022	052	082
023	053	083
024	054	084
025	055	085
026	056	086
027	057	087
028	058	088
029	059	089
030	060	090

SAMPLE SAMPLE

SIGNATURE OF CANDIDATE

Before submitting the Answer Sheet, Candidate / Invigilator should check that Roll No., Centre No. & Test Booklet No. Have been filled in and marked correctly.

SIGNATURE OF INVIGILATOR

LSOFT TEST SERIES

RANKING & PERFORMANCE REPORT

				TEST DATE :	13-Jul-2014
ROLL NO :	2014008	NAME :	Bondre Sanket Vijaykumar		
TEST NO :	111001	NAME :	JEE-MAINS TEST SERIES		

SUBJECT RANKING

Physics	Chemistry	Biology	Maths	PCM	PCB
1 /60	3 /60	--	1 /60	1 /60	--

QUESTIONS AND MARKS ANALYSIS

SUBJECT	TOTAL	SOLVED	UNSOLVED	CORRECT	WRONG	TOTAL	N-MARKS	MARKS	OUT OF	ACCU(%)	PERC(%)
PHYSICS	30	25	5	21	4	84	4	80	120	84.00	66.67
CHEMISTRY	30	30	0	27	3	108	3	105	120	90.00	87.50
MATHS	30	25	5	24	1	96	1	95	120	96.00	79.17
PCM	90	80	10	72	8	288	8	280	360	90.00	77.78

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TOPPER LIST (SUBJECT AND GROUP WISE)

SUBJECT	ROLLNO	NAME	TOTAL	N-MARKS	MARKS	OUT OF	PERC(%)
PHYSICS	2014008	Bondre Sanket Vijaykumar	84	4	80	120	66.67
PHYSICS	2014004	Barawakar Shivraj Tatyasaheb	76	3	73	120	60.83
PHYSICS	2014025	Jangid Govind Shankarlal	72	1	71	120	59.17
PHYSICS	2014001	Amane Nahush Suhas	76	5	71	120	59.17
PHYSICS	2014007	Bhujbal Rushikesh Anil	72	5	67	120	55.83
CHEMISTRY	2014001	Amane Nahush Suhas	112	2	110	120	91.67
CHEMISTRY	2014040	Nigade Shrawan Pradip	108	1	107	120	89.17
CHEMISTRY	2014008	Bondre Sanket Vijaykumar	108	3	105	120	87.50
CHEMISTRY	2014010	Chorat Satyam Vinayak	100	2	98	120	81.67
CHEMISTRY	2014028	Kadam Vishwajit Ravindra	100	3	97	120	80.83
MATHS	2014008	Bondre Sanket Vijaykumar	96	1	95	120	79.17
MATHS	2014030	Kapase Dnyaneshwar Avinash	92	2	90	120	75.00
MATHS	2014040	Nigade Shrawan Pradip	92	4	88	120	73.33
MATHS	2014004	Barawakar Shivraj Tatyasaheb	88	2	86	120	71.67
MATHS	2014001	Amane Nahush Suhas	88	5	83	120	69.17
PCM	2014008	Bondre Sanket Vijaykumar	288	8	280	360	77.78
PCM	2014001	Amane Nahush Suhas	276	12	264	360	73.33
PCM	2014040	Nigade Shrawan Pradip	264	11	253	360	70.28
PCM	2014030	Kapase Dnyaneshwar Avinash	260	11	249	360	69.17
PCM	2014004	Barawakar Shivraj Tatyasaheb	256	9	247	360	68.61

PERFORMANCE ANALYSIS FOR LAST 10 TEST

Test Details	Sub/s	Phy	Chem	Bio	Maths	Marks	Out of
110016 (JEE/NEET TEST SERIES) Dt: 10/01/14	C	0	110	0	0	110	180
110015 (JEE/NEET TEST SERIES) Dt: 01/01/14	B	0	0	112	0	112	180
110014 (JEE/NEET TEST SERIES) Dt: 01/01/14	M	0	0	0	33	33	120
110013 (JEE/NEET TEST SERIES) Dt: 13/12/13	C	0	36	0	0	36	180
110011 (JEE/NEET TEST SERIES) Dt: 01/12/13	P	54	0	0	0	54	180
110010 (JEE/NEET TEST SERIES) Dt: 18/11/13	P	52	0	0	0	52	180
110009 (JEE/NEET TEST SERIES) Dt: 10/10/13	M	0	0	0	74	74	120
110007 (JEE/NEET TEST SERIES) Dt: 29/09/13	C	0	55	0	0	55	180
110005 (JEE/NEET TEST SERIES) Dt: 27/08/13	PC	42	26	0	0	68	200

LSOFT TEST SERIES

OMR SHEET ANALYSIS REPORT

1)	1-1 (Correct)	2)	2-2 (Correct)	3)	3-3 (Correct)	4)	2-2 (Correct)	5)	2-2 (Correct)
6)	3-3 (Correct)	7)	1-1 (Correct)	8)	2-2 (Correct)	9)	4-4 (Correct)	10)	3-3 (Correct)
11)	2-2 (Correct)	12)	2-2 (Correct)	13)	0-1 (Unsolved)	14)	3-3 (Correct)	15)	4-4 (Correct)
16)	0-2 (Unsolved)	17)	4-4 (Correct)	18)	0-2 (Unsolved)	19)	3-3 (Correct)	20)	1-1 (Correct)
21)	0-2 (Unsolved)	22)	3-3 (Correct)	23)	4-4 (Correct)	24)	0-3 (Unsolved)	25)	3-3 (Correct)
26)	2-2 (Correct)	27)	3-3 (Correct)	28)	3-3 (Correct)	29)	3-3 (Correct)	30)	4-3 (Wrong)
31)	4-4 (Correct)	32)	3-3 (Correct)	33)	3-3 (Correct)	34)	2-2 (Correct)	35)	2-3 (Wrong)
36)	1-1 (Correct)	37)	4-4 (Correct)	38)	3-3 (Correct)	39)	4-4 (Correct)	40)	2-2 (Correct)
41)	1-1 (Correct)	42)	3-3 (Correct)	43)	1-1 (Correct)	44)	3-3 (Correct)	45)	1-1 (Correct)
46)	4-4 (Correct)	47)	3-3 (Correct)	48)	4-4 (Correct)	49)	4-4 (Correct)	50)	0-4 (Unsolved)
51)	4-4 (Correct)	52)	0-2 (Unsolved)	53)	4-4 (Correct)	54)	0-2 (Unsolved)	55)	2-2 (Correct)
56)	2-1 (Wrong)	57)	4-2 (Wrong)	58)	4-3 (Wrong)	59)	0-4 (Unsolved)	60)	0-1 (Unsolved)
61)	1-1 (Correct)	62)	2-2 (Correct)	63)	3-2 (Wrong)	64)	3-3 (Correct)	65)	4-4 (Correct)
66)	2-2 (Correct)	67)	1-4 (Wrong)	68)	3-3 (Correct)	69)	3-3 (Correct)	70)	2-2 (Correct)
71)	2-2 (Correct)	72)	3-3 (Correct)	73)	3-3 (Correct)	74)	2-2 (Correct)	75)	1-1 (Correct)
76)	3-3 (Correct)	77)	1-1 (Correct)	78)	1-1 (Correct)	79)	1-1 (Correct)	80)	3-3 (Correct)
81)	4-4 (Correct)	82)	1-1 (Correct)	83)	2-2 (Correct)	84)	3-3 (Correct)	85)	2-2 (Correct)
86)	3-3 (Correct)	87)	2-2 (Correct)	88)	1-3 (Wrong)	89)	3-3 (Correct)	90)	3-3 (Correct)

JEE-MAIN/NEET/AIPMT TEST SERIES SCHEDULE

XI-CHAPTER WISE OBJECTIVE TEST

XI - PHYSICS (JEE-MAIN/NEET/AIPMT)

Sr. No.	Chapter Name	Ques
1	Measurement	30
2	Scalars and Vectors	30
3	Projectile motion	30
4	Force	30
5	Friction in solids and liquids	30
6	Sound Waves	30
7	Thermal properties of matter	30
8	Refraction of Light	30
9	Ray optics	30
10	Electrostatics	30
11	Current electricity	30
12	Magnetic effect of electric current	30
13	Magnetism	30
14	Electromagnetic waves	30

XI - CHEMISTRY (JEE-MAIN/NEET/AIPMT)

Sr. No.	Chapter Name	Ques
1	Some Basic Concepts of Chemistry	30
2	States of matter : Gases and liquids	30
3	Structure of atom	30
4	Periodic table	30
5	Redox reaction	30
6	Chemical equilibrium	30
7	Surface chemistry	30
8	Nature of chemical bond	30
9	Hydrogen	30
10	s-Block elements (group 1 & 2)	30
11	p-Block elements (grpup 13 &14)	30
12	Basic principles and techniques in organic chemistry	30
13	Alkanes	30
14	Alkenes	30
15	Alkynes	30
16	Aromatic compounds	30
17	Environmental chemistry	30

JEE-MAIN/NEET/AIPMT TEST SCHEDULE

XI-CHAPTER WISE OBJECTIVE TEST

XI - MATHMATICS (JEE-MAIN)

Sr. No.	Chapter Name	Ques
1	Angle & Measurement	30
2	Trigonometric function	30
3	Trigonometric functions of compound angles & Factorization Form	30
4	Locus	30
5	Straight Line	30
6	Circle and Conics	30
7	Vectors & Linear Inequations	30
8	Determinants	30
9	Matrices	30
10	Sets, Relations and Functions	30
11	Logarithms	30
12	Complex Numbers	30
13	Sequences & Series	30
14	Permutations & combinations	30
15	Mathematical Induction and Binomial Theorem	30
16	Limits	30
17	Differentiation	30
18	Integration	30
19	Statistics	30
20	Probability	30

XI - BIOLOGY (NEET/AIPMT)

Sr. No.	Chapter Name	Que
1	Diversity in organisms	60
2	Kingdom Plantae	60
3	Biochemistry of cell	60
4	Cell Division	60
5	Morphology of Plants	60
6	Pant Water Relations and Mineral Nutrition	60
7	Plant Growth and Development	60
8	Kingdom Animalia	60
9	Organization of Cell	60
10	Study of Animal Tissues	60
11	Study of Animal Typ	60
12	Human Nutrition	60
13	Human Respiration	60
14	Human skeleton and Locomotion	60

XI-CHAPTER WISE OBJECTIVE TEST

JEE-MAIN/NEET/AIPMT TEST SCHEDULE

XII-CHAPTER WISE OBJECTIVE TEST

XII - PHYSICS (JEE-MAIN/NEET/AIPMT)

Sr. No.	Chapter Name	Ques
1	Circular motion	30
2	Gravitation	30
3	Rotational motion	30
4	Oscillations	30
5	Elasticity	30
6	Surface tension	30
7	Wave motion	30
8	Stationary waves	30
9	Kinetic theory of gases	30
10	Wave theory of light	30
11	Interference and diffraction	30
12	Electrostatics	30
13	Current electricity	30
14	Magnetic effects of electric current	30
15	Magnetism	30
16	Electromagnetic inductions	30
17	Electrons and photons	30
18	Atoms, Molecules and Nuclei	30
19	Semiconductors	30
20	Communication systems	30

XII - CHEMISTRY (JEE-MAIN/NEET/AIPMT)

Sr. No.	Chapter Name	Ques
1	Solid State	30
2	Solutions and colligative properties	30
3	Chemical thermodynamics and energetic	30
4	Electrochemistry	30
5	Chemical kinetics	30
6	General principles and processes of isolation of elements	30
7	p-Block elements (Group - 15, 16, 17, 18)	30
8	d and f Block Elements	30
9	Coordination compounds	30
10	Halogen derivatives of alkanes	30
11	Alcohols, phenols and ethers	30
12	Aldehydes, ketones and carboxylic acids	30
13	Organic compounds containing nitrogen	30
14	Biomolecules	30
15	Polymers	30
16	Chemistry in everyday life	30

JEE-MAIN/NEET/AIPMT TEST SCHEDULE

XII-CHAPTER WISE OBJECTIVE TEST

XII - MATHMATICS (JEE-MAIN)

Sr. No.	Chapter Name	Ques
1	Mathematical Logic	30
2	Matrices	30
3	Trigonometric functions	30
4	Pair of straight lines	30
5	Circle	30
6	Conics	30
7	Vectors	30
8	Three dimensional geometry	30
9	Line	30
10	Plane	30
11	Linear programming problems	30
12	Continuity	30
13	Differentiation	30
14	Applications of derivative	30
15	Integration	30
16	Applications of definite integral	30
17	Differential equation	30
18	Statistics	30
19	Probability distribution	30
20	Bernoulli trials and Binomial distribution	30

XII - BIOLOGY (NEET/AIPMT)

Sr. No.	Chapter Name	Que
1	Genetic Basis of Inheritance	60
2	Gene: its nature, expression and regulation	60
3	Biotechnology: Process and Application	60
4	Enhancement in Food Production	60
5	Microbes in Human Welfare	60
6	Photosynthesis	60
7	Respiration	60
8	Reproduction in Plants	60
9	Organisms and Environment-I	60
10	Origin and the Evolution of Life	60
11	Chromosomal Basis of Inheritance	60
12	Genetic Engineering and Genomics	60
13	Human Health and Diseases	60
14	Animal Husbandry	60
15	Circulation	60
16	Excretion and osmoregulation	60
17	Control and Co-ordination	60
18	Human Reproduction	60
19	Organisms and Environment-II	60

(JEE Main Pattern 11th + 12th Syllabus)

UNIT TEST SCHEDULE

Sr. No.	PHYSICS	Que
1	PHY UNIT TEST -I PHYSICS AND MEASUREMENT KINEMATICS LAWS OF MOTION WORK, ENERGY AND POWER	30
2	PHY UNIT TEST -II ROTATIONAL MOTION GRAVITATION PROPERTIES OF SOLIDS & LIQUIDS THERMODYNAMICS	30
3	PHY UNIT TEST -III KINETIC THEORY OF GASES OSCILLATION & WAVES ELECTROSTATICS CURRENT ELECTRICITY	30
4	PHY UNIT TEST -IV MAGNETIC EFFECTS OF CURRENT & MAGNETISM ELECTROMAGNETIC INDUCTION & ALTERNATING CURRENTS ELECTROMAGNETIC WAVES OPTICS	30
5	PHY UNIT TEST -V DUAL NATURE OF MATTER AND RADIATION ATOMS AND NUCLEI ELECTRONIC DEVICES COMMUNICATION SYSTEMS	30

Sr. No.	CHEMISTRY	Que
1	CHEM UNIT TEST -I SOME BASIC CONCEPTS STATES OF MATTER (GASES, LIQUID, SOLID) ATOMIC STRUCTURE CHEMICAL BONDING AND MOLECULAR STRUCURE CHEMICAL THERMODYNAMICS	30
2	CHEM UNIT TEST -II SOLUTIONS EQUILIBRIUM (PHYSICAL, CHEMICAL, IONIC) REDOX REACTIONS & ELECTROCHEMISTRY CHEMICAL KINETICS SURFACE CHEMISTRY (ADSORPTION, CATALYSIS, COLLOIDAL STATE)	30
3	CHEM UNIT TEST -III CLASSIFICATION OF ELEMENT & PERIDICITY IN PROPERTIES (CLASSIFICATION OF ELEMENTS, PERIODIC TABLE,PERIDICITY IN PROPER GENERAL PRINCIPLES & PROCESSES OF ISOLATION OF METALS HYDROGEN S-BLOCK ELEMENTS (GROUP 1 & 2) P-BLOCK ELEMENTS (GROUP 13, 14, 15, 16, 17 & 18)	30

	CHEM UNIT TEST -IV	
	D AND F BLOCK ELEMENTS AND THEIR COMPOUNDS	
	CO-ORDINATION COMPOUNDS	
4	ENVIRONMENTAL CHEMISTRY (I) GAS II) WATER III) SOIL)	30
	PURIFICATION AND CHARACTERISATION OF ORGANIC COMPOUNDS	
	GENERAL ORGANIC CHEMISTRY PRINCIPLES	
	HYDROCARBONS	
	CHEM UNIT TEST -V	
	ORGANIC COMPOUNDS CONTAINING HALOGENS	
	ORGANIC COMPOUNDS CONTAINING OXYGEN (ALCOHOLS, PHENOLS	
5	AND ETHERS, ALDEHYDES AND KETONES & CARBOXYLIC ACIDS)	30
	ORGANIC COMPOUNDS CONTAINING NITROGEN (AMINES & DIAZONIUM SA	
	POLYMERS	
	BIOMOLECULES	
	CHEMISTRY IN EVERY DAY LIFE	

Sr. No.	MATHS	Que
	MATHS UNIT TEST -I	
1	SETS, RELATIONS AND FUNCTIONS	30
	COMPLEX NUMBERS & QUADRATC EQUATIONS	
	MATRICES AND DETERMINANTS	
	MATHS UNIT TEST -II	
2	PEMUTATION AND COMBINATION	30
	MATHEMATICAL INDUCTION	
	BINOMIAL THEOREM AND ITS APPLICATION	
	MATHS UNIT TEST -III	
	SEQUENCE AND SERIES	
3	LIMIT AND CONTINUITY & DIFFERENTIABILITY	30
	INTEGRAL CALCULUS (INDEFINITE INTEGRALS, DEFINITE INTEGRALS	
	& AREA UNDER SIMPLE CURVES (BOUNDED REGIONS))	
	MATHS UNIT TEST -IV	
4	DIFFERENTIAL EQUATIONS	30
	CO-ORDINATE GEOMETRY (STRAIGHT LINE, CIRCLE & CONIC SECTION)	
	THREE DIMENSIONAL GEOMETRY	
	MATHS UNIT TEST -V	
	VECTOR ALGEBRA	
5	STATISTICS AND PROBABILITY	30
	TRIGONOMETRY	
	(FUNCTIONS & EQUATIONS, HEIGHT & DISTANCES, INVERSE FUNCTIONS)	
	MATHEMATICAL REASONING	

10 - FULL PORTION TESTS FOR PHYSICS

10 - FULL PORTION TESTS FOR CHEMISTRY

10 - FULL PORTION TESTS FOR MATHEMATICS

(AIPMT/NEET Pattern 11th + 12th Syllabus)

UNIT TEST SCHEDULE

	PHYSICS	Question
1	**UNIT TEST -I** MEASUREMENT SCALARS AND VECTORS PROJECTILE MOTION FORCE FRICTION IN SOLIDS AND LIQUIDS SOUND WAVES THERMAL PROPERTIES OF MATTER	45
2	**UNIT TEST -II** REFRACTION OF LIGHT RAY OPTICS ELECTROSTATICS CURRENT ELECTRICITY MAGNETIC EFFECT OF ELECTRIC CURRENT MAGNETISM ELECTROMAGNETIC WAVES	45
3	**UNIT TEST -III** CIRCULAR MOTION GRAVITATION ROTATIONAL MOTION OSCILLATIONS ELASTICITY SURFACE TENSION WAVE MOTION	45
4	**UNIT TEST -IV** STATIONARY WAVES KINETIC THEORY OF GASES WAVE THEORY OF LIGHT INTERFERENCE AND DIFFRACTION ELECTROSTATICS CURRENT ELECTRICITY MAGNETIC EFFECTS OF ELECTRIC CURRENT	45
5	**UNIT TEST -V** MAGNETISM ELECTROMAGNETIC INDUCTIONS ELECTRONS AND PHOTONS ATOMS, MOLECULES AND NUCLEI SEMICONDUCTORS COMMUNICATION SYSTEMS	45

CHEMISTRY		Question
1	**UNIT TEST -I**	45
	SOME BASIC CONCEPTS OF CHEMISTRY	
	STATES OF MATTER : GASES AND LIQUIDS	
	STRUCTURE OF ATOM	
	PERIODIC TABLE	
	REDOX REACTION	
	CHEMICAL EQUILIBRIUM	
	SURFACE CHEMISTRY	
	NATURE OF CHEMICAL BOND	
2	**UNIT TEST -II**	45
	HYDROGEN	
	S-BLOCK ELEMENTS (GROUP 1 & 2)	
	P-BLOCK ELEMENTS (GRPUP 13 &14)	
	BASIC PRINCIPLES AND TECHNIQUES IN ORGANIC CHEMISTRY	
	ALKANES	
	ALKENES	
	ALKYNES	
	AROMATIC COMPOUNDS	
	ENVIRONMENTAL CHEMISTRY	
3	**UNIT TEST -III**	45
	SOLID STATE	
	SOLUTIONS AND COLLIGATIVE PROPERTIES	
	CHEMICAL THERMODYNAMICS AND ENERGETIC	
	ELECTROCHEMISTRY	
	CHEMICAL KINETICS	
	GENERAL PRINCIPLES AND PROCESSES OF ISOLATION OF ELEMEN	
4	**UNIT TEST -IV**	45
	P-BLOCK ELEMENTS (GROUP - 15, 16, 17, 18)	
	D AND F BLOCK ELEMENTS	
	COORDINATION COMPOUNDS	
	HALOGEN DERIVATIVES OF ALKANES	
	ALCOHOLS, PHENOLS AND ETHERS	
5	**UNIT TEST -V**	45
	ALDEHYDES, KETONES AND CARBOXYLIC ACIDS	
	ORGANIC COMPOUNDS CONTAINING NITROGEN	
	BIOMOLECULES	
	POLYMERS	
	CHEMISTRY IN EVERYDAY LIFE	

BIOLOGY		Question
1	**UNIT TEST -I**	90
	DIVERSITY IN ORGANISMS	
	KINGDOM PLANTAE	
	BIOCHEMISTRY OF CELL	
	CELL DIVISION	
	MORPHOLOGY OF PLANTS	
	PANT WATER RELATIONS AND MINERAL NUTRITION	
	PLANT GROWTH AND DEVELOPMENT	
2	**UNIT TEST -II**	90
	KINGDOM ANIMALIA	
	ORGANIZATION OF CELL	
	STUDY OF ANIMAL TISSUES	
	STUDY OF ANIMAL TYP	
	HUMAN NUTRITION	
	HUMAN RESPIRATION	
	HUMAN SKELETON AND LOCOMOTION	
3	**UNIT TEST -III**	90
	GENETIC BASIS OF INHERITANCE	
	GENE ITS NATURE, EXPRESSION AND REGULATION	
	BIOTECHNOLOGY PROCESS AND APPLICATION	
	ENHANCEMENT IN FOOD PRODUCTION	
	MICROBES IN HUMAN WELFARE	
	PHOTOSYNTHESIS	
4	**UNIT TEST -IV**	90
	RESPIRATION	
	REPRODUCTIOIN IN PLANTS	
	ORGANISMS AND ENVIRONMENT -I	
	ORIGIN AND EVLUTION OF LIFE	
	CHROMOSOMAL BASIS OF INHERITANCE	
	GENETIC ENGINEERING AND GENOMICS	
5	**UNIT TEST -V**	90
	HUMAN HEALTH AND DISESES	
	ANIMAL HUSBANDRY	
	CIRCULATION	
	EXCRETION AND OSMOREGULATION	
	CONTROL CO-ORDINATION	
	HUMAN REPRODUCITON	
	ORGANISMS AND ENVIRONMENT II	

10 - FULL PORTION TESTS FOR PHYSICS
10 - FULL PORTION TESTS CHEMISTRY
10 - FULL PORTION TESTS BIOLOGY

AIPMT/NEET TEST SCHEDULE

PHYSICS

Sr. No.	Chapterwise	Ques
1	Physical World & Measurement	45
2	Kinematics	45
3	Laws of Motion	45
4	Work, Energy and Power	45
5	Motion of System of Particles and Rigid Body & Gravitation	45
6	Properties of Bulk Matter	45
7	Thermodynamics, Kinetic Theory & Behaviour of Perfect Gas	45
8	Oscillation and Waves	45
9	Electrostatics	45
10	Current Electricity	45
11	Magnetic Effects of Current & Magnetism	45
12	Electromagnetic Induction, Electromagnetic Waves & Alternating Current	45
13	Optics	45
14	Dual Nature of Matter and Radiation & Atoms and Nuclei	45
15	Electronic Devices	45
16	Syllabus of Test No. 1 to 3	45
17	Syllabus of Test No. 5 to 7	45
18	Syllabus of Test No. 9 to 11	45
19	Syllabus of Test No. 13 to 15	45
20	Syllabus of Test No. 17 to 19	45
21	Syllabus of Test No. 1 to 3	45
22	Syllabus of Test No. 1 to 6	45
23	Syllabus of Test No. 1 to 9	45
24	Syllabus of Test No. 1 to 12	45
25	Syllabus of Test No. 1 to 15	45
26	Complete Syllabus of Physics	45
27	Complete Syllabus of Physics	45
28	Complete Syllabus of Physics	45
29	Complete Syllabus of Physics	45
30	Complete Syllabus of Physics	45

**CHEMISTRY**
Sr. No.	Chapterwise	Ques
1	Some Basic Concepts of Chemistry & Structure of Atom	45
2	Classification of Elements and Periodicity in Properties & Chemical Bonding and Molecular Structure	45
3	Organic Chemistry – Some Basic Principles and Techniques & Hydrocarbons	45
4	States of Matter: Gases and Liquids & Thermodynamics	45
5	Equilibrium & Redox Reactions	45
6	Solid State & Solutions	45
7	Haloalkanes and Haloarenes and Alcohols, Phenols and Ethers	45
8	Aldehydes, Ketones and Carboxylic Acids	45
9	Electrochemistry	45
10	Chemical Kinetics & Surface Chemistry	45
11	Organic Compounds Containing Nitrogen, Biomolecules, Polymers & Chemistry in Everyday Life	45
12	Hydrogen & General Principles & Processes of Isolation of Elements	45
13	s – Block Element & d and f Block Elements	45
14	p – Block Elements (11th + 12th)	45
15	Coordination Compounds and Environmental Chemistry	45
16	Syllabus of Test No. 1 to 3	45
17	Syllabus of Test No. 5 to 7	45
18	Syllabus of Test No. 9 to 11	45
19	Syllabus of Test No. 13 to 15	45
20	Syllabus of Test No. 17 to 19	45
21	Syllabus of Test No. 1 to 3	45
22	Syllabus of Test No. 1 to 7	45
23	Syllabus of Test No. 1 to 11	45
24	Syllabus of Test No. 1 to 15	45
25	Syllabus of Test No. 1 to 19	45
26	Complete Syllabus of Chemistry	45
27	Complete Syllabus of Chemistry	45
28	Complete Syllabus of Chemistry	45
29	Complete Syllabus of Chemistry	45
30	Complete Syllabus of Chemistry	45

BIOLOGY		
Sr. No.	Chapterwise	Ques
1	Diversity in Living World	90
2	Structural Organisation in Animals and Plants	90
3	Cell Structure and Function	90
4	Plant Physiology (Transport in Plants, Mineral Nutrition,	90
5	Plant Physiology (Photosynthesis, Respiration)	90
6	Human Physiology (Digestion & Absorption, Breathing & Respiration, Body Fluids & Circulation)	90
7	Human Physiology (Excretory Products & their Elimination, Locomotion & Movement, Neural Control & Coordination, Chemical Coordination & Regulation)	90
8	Reproduction (Reproduction in Organisms, Sexual Reproduction in Flowering Plants)	90
9	Reproduction (Human Reproduction, Reproductive Health)	90
10	Genetics & Evolution (Heredity & Variation, Molecular Basis of Inheritance)	90
11	Genetics & Evolution (Evolution) & Biology & Human Welfare (Health & Disease)	90
12	Biology & Human Welfare (Improvement in Food Production,	90
13	Biotechnology & its Applications	90
14	Ecology & Environment (Ecosystem, Biodiversity & Conservation)	90
15	Ecology & Environment (Organisms & Environment, Environmental Issues)	90
16	Syllabus of Test No. 1 to 3	90
17	Syllabus of Test No. 5 to 7	90
18	Syllabus of Test No. 9 to 11	90
19	Syllabus of Test No. 13 to 15	90
20	Syllabus of Test No. 17 to 19	90
21	Syllabus of Test No. 1 to 3	90
22	Syllabus of Test No. 1 to 3 & 4 to 7	90
23	Syllabus of Test No. 1 to 11	90
24	Syllabus of Test No. 1 to 15	90
25	Syllabus of Test No. 1 to 19	90
26	Complete Syllabus of Biology	90
27	Complete Syllabus of Biology	90
28	Complete Syllabus of Biology	90
29	Complete Syllabus of Biology	90
30	Complete Syllabus of Biology	90

JEE-MAIN TEST SERIES

Test No.	Test Name	Chapter Wise Test	Ques.
1	Physics	Physics and Measurement	30
	Chemistry	Some Basic Concepts, States of matter (Gaseous, Liquid, Solid), Atomic Structure	30
	Maths	Sets, Relations and Functions	30
2	Chemistry	Chemical Bonding and Molecular Structure	30
	Maths	Complex Numbers, Quadratic Equations	30
	Physics	Kinematics	30
3	Maths	Matrices and Determinants	30
	Physics	Laws of Motion, Impulse And Momentum	30
	Chemistry	Energetics and Chemical Thermodynamics	30
4	Physics	Work, Energy and Power	30
	Chemistry	Solutions	30
	Maths	Permutations and Combinations	30
5	Chemistry	Chemical Equilibrium, Ionic Equilibrium	30
	Maths	Mathematical Induction and Its Application	30
	Physics	Rotational Motion	30
6	Maths	Binomial Theorem and Its Application	30
	Physics	Gravitation	30
	Chemistry	Redox Reactions, Electrochemistry	30
7	Physics	Real Solids & Liquids, Surface Tension	30
	Chemistry	Chemical Kinetics	30
	Maths	Sequence and Series	30
8	Chemistry	Surface Chemistry	30
	Maths	Limit,Continuity & Differentiability	30
	Physics	Heat and Thermodynamics	30
9	Maths	Derivatives, Application of Derivatives	30
	Physics	Kinetic Theory of gases	30
	Chemistry	Classification of elements, Periodicity in Properties, Basic Principles of Extractive Metallurgy	30
10	Physics	Waves, Oscillations, Simple Harmonic Motion	30
	Chemistry	Hydrogen And Its Compounds	30
	Maths	Integral Calculus (Definite, Indefinite, Area Under Simple Curves)	30
11	Chemistry	s-Block elements (Elements Of Group 1 and 2 and their compounds)	30
	Maths	Differential Equations	30
	Physics	Electrostatics	30
12	Maths	Rectangular Co-ordinates - The Straight and Pair of Straight Lines	30
	Physics	Current electricity	30
	Chemistry	p-Block Elements (Elements Of Group 13, 14, 15, 16, 17, 18 and their compounds)	30

13	Physics	Magnetostatics (Magnetism & Magnetic Effects of Current)	30
	Chemistry	d And f Block Elements And Their Compounds	30
	Maths	Circles and System of Circles	30
14	Chemistry	Co-ordination Compounds And Organometallics	30
	Maths	Conic Section - 1) Parabola 2) Hyperbola 3) Ellipse	30
	Physics	Electromagnetic Induction, Alternating Currents	30
15	Maths	Three Dimensional Geometry	30
	Physics	Electromagnetic Waves	30
	Chemistry	Environmental Chemistry	30
16	Physics	Optics	30
	Chemistry	Purification and Characterisation of Organic Compounds, General Organic Chemistry Principles, Hydrocarbons	30
	Maths	Vectors	30
17	Chemistry	Organic Compounds Containing Halogens, Alkyl And Arylhalides	30
	Maths	Statistics and Probability	30
	Physics	Dual Nature of Matter and Radiation	30
18	Maths	Trigonometry	30
	Physics	Atoms and Nuclei, Modern Physics	30
	Chemistry	Alcohols, Phenols and Ethers, Aldehydes and Ketones, Carboxylic Acids and their derivatives	30
19	Physics	Electronic Devices	30
	Chemistry	Amines, Diazonium salts	30
	Maths	Inverse Trigonometric Functions, Heights and Distances	30
20	Chemistry	Polymers, Biomolecules, Chemistry in every day life, Principles related to practical chemistry	30
	Maths	Mathematical Reasoning	30
	Physics	Communication Systems, Experimental Skills	30

JEE-MAINS Full Portion Test

21	PCM	Full Length Test Series- 1	90
22	PCM	Full Length Test Series- 2	90
23	PCM	Full Length Test Series- 3	90
24	PCM	Full Length Test Series- 4	90
25	PCM	Full Length Test Series- 5	90
26	PCM	Full Length Test Series- 6	90
27	PCM	Full Length Test Series- 7	90
28	PCM	Full Length Test Series- 8	90
29	PCM	Full Length Test Series- 9	90
30	PCM	Full Length Test Series- 10	90

MHT-CET TEST SCHEDULE

XII-PHYSICS

Sr. No.	Chapter	Ques
1	Circular motion	50
2	Gravitation	50
3	Rotational motion	50
4	Oscillations	50
5	Elasticity	50
6	Surface tension	50
7	Wave motion	50
8	Stationary waves	50
9	Kinetic theory of gases	50
10	Wave theory of light	50
11	Interference and diffraction	50
12	Electrostatics	50
13	Current electricity	50
14	Magnetic effects of electric current	50
15	Magnetism	50
16	Electromagnetic inductions	50
17	Electrons and photons	50
18	Atoms, Molecules and Nuclei	50
19	Semiconductors	50
20	Communication systems	50

XII-CHEMISTRY

Sr. No.	Chapter	Ques
1	Solid State	50
2	Solutions and colligative properties	50
3	Chemical thermodynamics and energetic	50
4	Electrochemistry	50
5	Chemical kinetics	50
6	General principles and processes of isolation of elements	50
7	p-Block elements (Group - 15, 16, 17, 18)	50
8	d and f Block Elements	50
9	Coordination compounds	50
10	Halogen derivatives of alkanes	50
11	Alcohols, phenols and ethers	50
12	Aldehydes, ketones and carboxylic acids	50
13	Organic compounds containing nitrogen	50
14	Biomolecules	50
15	Polymers	50
16	Chemistry in everyday life	50

XII-MATHS

Sr. No.	Chapter	Ques
1	Mathematical Logic	50
2	Matrices	50
3	Trigonometric functions	50
4	Pair of straight lines	50
5	Vectors	50
6	Three dimensional geometry	50
7	Line	50
8	Plane	50
9	Linear programming problems	50
10	Continuity	50
11	Differentiation	50
12	Applications of derivative	50
13	Integration	50
14	Definite integral	50
15	Applications of definite integral	50
16	Differential equation	50
17	Probability distribution	50
18	Bernoulli trials and Binomial distribution	50

XII-BIOLOGY

Sr. No.	Chapter	Ques
1	Genetic Basis of Inheritance	100
2	Gene: its nature, expression and regulation	100
3	Biotechnology: Process and Application	100
4	Enhancement in Food Production	100
5	Microbes in Human Welfare	100
6	Photosynthesis	100
7	Respiration	100
8	Reproduction in Plants	100
9	Organisms and Environment-I	100
10	Origin and the Evolution of Life	100
11	Chromosomal Basis of Inheritance	100
12	Genetic Engineering and Genomics	100
13	Human Health and Diseases	100
14	Animal Husbandry	100
15	Circulation	100
16	Excretion and osmoregulation	100
17	Control and Co-ordination	100
18	Human Reproduction	100
19	Organisms and Environment-II	100

PCMB UNIT TEST SCHEDULE

Sr. No.	PHYSICS-Unit Wise Test	Ques
1	Circular motion Wave theory of light Gravitation Interference and diffraction	50
2	Rotational motion Electrostatics Oscillations Current electricity	50
3	Elasticity Magnetic effects of electric current Surface tension Magnetism	50
4	Wave motion Electromagnetic inductions Stationary waves Electrons and photons	50
5	Kinetic theory of gases Atoms, Molecules and Nuclei Semiconductors Communication systems	50

Sr. No.	Chemistry-Unit Wise Test	Ques
1	Solid State Solutions and colligative properties Coordination compounds	50
2	Chemical thermodynamics and energetic Halogen derivatives of alkanes Alcohols, phenols and ethers	50
3	Electrochemistry Chemical kinetics Aldehydes, ketones and carboxylic acids	50
4	Organic compounds containing nitrogen Biomolecules General principles and processes of isolation of elements	50
5	p-Block elements (Group - 15, 16, 17, 18) d and f Block Elements Polymers Chemistry in everyday life	50

Sr. No.	Mathematics-Unit Wise Test	Ques
1	Mathematical Logic Continuity Matrices Differentiation	50
2	Trigonometric functions Applications of derivative Pair of straight lines Integration	50
3	Vectors Definite integral Three dimensional geometry Applications of definite integral	50
4	Line Differential equation Plane Probability distribution	50
5	Linear programming problems Bernoulli trials and Binomial distribution Vectors,3D,Plane Integration,Differentiation,Def.integral	50

Sr. No.	Biology-Unit Wise Test	Ques
1	Genetic Basis of Inheritance Origin and the Evolution of Life Gene: its nature, expression and regulation Chromosomal Basis of Inheritance	100
2	Biotechnology: Process and Application Genetic Engineering and Genomics Enhancement in Food Production Human Health and Diseases	100
3	Microbes in Human Welfare Animal Husbandry Photosynthesis Circulation	100
4	Respiration Excretion and osmoregulation Reproduction in Plants Control and Co-ordination	100
5	Organisms and Environment-I Human Reproduction Organisms and Environment-II	100

PCMB-Full Portion Test-5		
1	Full Portion Test-1	
2	Full Portion Test-2	
3	Full Portion Test-3	
4	Full Portion Test-4	
5	Full Portion Test-5	