BEATS ENGINEERING

INSTITUTE OF ENGINEERING

MODEL ENTRANCE EXAM

(Beats Test Series - Day 4)

Instructions:

There are 100 multiple-choice questions, each having four choices of which only one choice is correct.

Date : 2081/05/05 (August 21) **Duration** : 2 hours **Time :** 8 A.M. – 10 A.M.

<u>SECTION – A (1 marks)</u> (1*60 = 60)

| 1) | The faculty div | ided on the promotion ar | rangements made last w | eek. |
|----------|--|------------------------------|-----------------------------|--------------------------------|
| , | a) is | b) were | c) has been | d) was |
| 2) | I must go befor | the shops are closed. | , | , |
| , , | a) shopping | b) to shop | c) to shopping | d) shop |
| 3) | The plane for F | okhara tomorrow. | | , , |
| , , | a) is leaving | b) left | c) was leaving | d) leaves |
| 4) | She would rather that y | ou then. | | <i>`</i> |
| <i>,</i> | a) work | b) had worked | c) worked | d) have worked |
| 5) | They differ one | e another on many points | • | <i>`</i> |
| / | a) to | b) at | c) for | d) from |
| 6) | "I had my vaccination t | today." The word 'vaccin | nation' has a stress prima | rily on its syllable. |
| / | a) first | b) second | c) third | d) fourth |
| 7) | The correct phonetic sy | mbol of the underlined p | part of the word "Either" | is: |
| <i>,</i> | a) /eI/ | b) /eə/ | c) /Iə/ | d) /al/ |
| 8) | "To spin a yarn" means | 5: | | , , , |
| / | a) to try hard | | b) to be inconsistent | |
| | c) to make up a story | | d) to be in charge | |
| 9) | Confined (Antonym): | | | |
| / | a) enclosed | b) liberate | c) cramped | d) incarcerated |
| 10) | Irrevocable (Synonym) | : | | , |
| , | a) conclusive | b) changeable | c) flexible | d) alterable |
| 11) | The passive voice of, " | She handles all tasks effi | ciently." is: | , |
| , | a) All tasks are handled | l efficiently by her. | 2 | |
| | b) All tasks were handl | ed efficiently by her. | | |
| | c) All tasks have been l | nandled efficiently by her | r. | |
| | d) All tasks are being h | andled efficiently by her | | |
| 12) | The grammatical patter | n of the following senter | nce, "The committee mad | de me secretary of the school" |
| , | is: | | | |
| | a) $S + V + O + A$ | | b) $S + V + O + C + A$ | |
| | c) $A + S + V + O$ | | d) $A + S + V + C$ | |
| 13) | $\lim(1-x)\tan\frac{\pi x}{x} =$ | | | |
| , | $x \rightarrow 1$ 2 | . 2 | 、 、 | . 1 |
| | a) $\frac{1}{2}$ | b) $\frac{-}{\pi}$ | c) <i>π</i> | d) $\frac{-}{\pi}$ |
| 14) | $\frac{d}{d}\left(\frac{\cos x}{\cos x}\right) =$ | | | |
|) | $dx \left(\sin x + 1 \right)$ | -1 | 、 1 | · -1 |
| | a) $\frac{1}{1-\sin x}$ | b) $\frac{-}{\cos x+1}$ | c) $\frac{1}{1-\cos x}$ | d) $\frac{1}{\sin x + 1}$ |
| 15) | If $xy = 4$ and $x < 0$, the | hen maximum value of x | + 16 <i>y</i> is: | |
| | a) 8 | b) -8 | c) 16 | d) -16 |
| 16) | $\int \frac{dx}{dx} = $ | | | |
| -) | $\int x + \sqrt{x}$ | | (\Box) | |
| | a) $\log(\sqrt{x} + 1) + c$ | | b) $\log(\sqrt{x}) + c$ | |
| | c) $2\log(\sqrt{x}+1)+c$ | | d) $2\log(\sqrt{x}) + c$ | |
| 17) | The value of k for which | ch the roots of the equation | $\sin x^2 - kx + k + 1 = 0$ | are in the ratio 2:3 is: |
| | a) $k = 6$ | b) $k = -6$ | c) $k = 5$ | d) $k = -5$ |
| 18) | $\sum_{n=0}^{\infty} \frac{(\log_e x)^{2n}}{(2n)!} =$ | | | |
| , | (2n)! | 1, 1, | $x+x^{-1}$ | $e^{x} + e^{-x}$ |
| | a) $\frac{1}{2}$ | b) $\frac{1}{x} + x$ | c) $\frac{1}{2}$ | d) $\frac{1}{2}$ |
| 19) | If 5, <i>x</i> , <i>y</i> , <i>z</i> , 405 are in (| J.P., then $z =$ | | |
| • • • | a) 15 | b) 45 | c) 135 | d) 85 |
| 20) | In 30 balls, a batsman hits the boundaries 6 times. What will be the probability that he did not hit the | | | |
| | boundaries? | | N A / F | |
| | a) 1/5 | b) 4/5 | c) 3/5 | d) 2/5 |

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| 21) | If matrix A is of order $p \times q$ and matrix B is o a) $p = q$ | ix A is of order $p \times q$ and matrix B is of order $r \times s$, then $A - B$ will exist if: p = r, q = s | | |
|--------|--|---|--|--|
| | c) $p = q, r = s$ | c) $p = s, q = r$ | | |
| 22) | A candidate has to pass in 5 different subjects if fail is: | in an examination. The nu | mber of ways in which he may | |
| | a) 30 b) 31 | c) 32 | d) 33 | |
| 23) | Let f and g be the functions defined by $f(x) =$ | $\frac{x}{x+1}$, $g(x) = \frac{x}{1-x}$, then | fog(x) is: | |
| | a) $\frac{1}{x}$ b) $\frac{1}{x-1}$ | c) $x - 1$ | d) <i>x</i> | |
| 24) | ax + by + c = 0, bx + cy + a = 0 and $cx + 0$, then: | ay + b = 0 are equations | s of three lines. If $a + b + c =$ | |
| | a) lines are concurrent | b) lines are parallel to | each other | |
| • • | c) all lines are coincident | d) they form a triangle | | |
| 25) | Equation $x^2 + ky^2 + 4xy = 0$ represents two | coincident lines if $k =$ | 1) 1.6 | |
| 20 | a) 0 b) 1 The line $\alpha = \max + \alpha$ interpret the norm hele α | c) 4 2 - 4 and in the importance | | |
| 26) | The line $y = mx + c$ intersects the parabola y | r = 4ax in two imaginary | y points if: mc | |
| | a) $\frac{a}{a} < 1$ b) $\frac{a}{a} > 1$ | c) $\frac{1}{a} = 1$ | d) $\frac{1}{a} = 0$ | |
| 27) | The vertices of the ellipse $16x^2 + 25y^2 = 40$ | 0 is: | | |
| | a) $(\pm 5, 0)$ b) $(\pm 4, 0)$ | c) $(0, \pm 4)$ | d) (0, ±5) | |
| 28) | The equation of plane passing through the point | nt $(1, -1, 2)$ and making equation | qual intercept on the axes is: | |
| | a) $x - y + 2z = 0$ | b) $x - y + 2z = 2$ | | |
| 20) | c) $x + y + z = 0$ | d) $x + y + z = 2$ | | |
| 29) | The value of $4 \sin A \cos^2 A - 4 \cos A \sin^2 A \sin^2 A$ is | equal to: | d) airs 4.4 | |
| 20) | a) $\cos 8A$ b) $\sin 2A$ The number of colutions of $\sin^2 \theta + 2\cos \theta =$ | $c) \cos 4A$ | d) SIN 4A | |
| 30) | The number of solutions of $sin(\theta + 3\cos\theta) =$ | r = 10 $r = 10$ $r = 10$ $r = 10$ $r = 10$ | d) 1 | |
| 31) | If $\csc^{-1} r = \sin^{-1} \frac{1}{2}$ then which of the following | owing is not the value of | v? | |
| 51) | $\frac{1}{x}$, then when of the form | | | |
| | a) $x = -\frac{1}{2}$ b) $x = \frac{1}{2}$ | c) $x = -\frac{1}{2}$ | d) $x = 1$ | |
| 32) | If θ is the angle between vectors such that \vec{a} . \vec{b} | ≥ 0 , then: | | |
| | a) $0 \le \theta \le \pi$ | b) $\frac{\pi}{2} \le \theta \le \pi$ | | |
| | c) $0 \le \theta \le \frac{\pi}{2}$ | d) $\hat{0} < \theta < \frac{\pi}{2}$ | | |
| 33) | $16 \propto 16 = 2$ | as in: | | |
| 55) | a) $16 \text{ g of } CO$ b) $28 \text{ g of } N_2$ | c) 14 g of N_2 | d) 2 g of H_2 | |
| 34) | Which of the following is not permissible array | ngement of electrons in a | n atom? | |
| , , | a) $n = 5, l = 3, m = 0, s = +1/2$ | b) $n = 3, l = 2, m = -3, s = -1/2$ | | |
| | c) $n = 3, l = 2, m = -2, s = -1/2$ | d) $n = 4, l = 0, m = 0$ | s = -1/2 | |
| 35) | Dipole induced dipole interaction are present i | n which pair? | | |
| | a) H_2O and alcohol b) Cl_2 and CCl_4 | c) HCl and He | d) SiF ₄ and He | |
| 36) | 1 mole of H_2SO_4 is mixed with 2 moles of NaC | OH. The heat evolved will | l be: | |
| | a) 57.3 kJ | b) 2×57.3 kJ | | |
| 27) | c) $5/.3/2$ KJ Which of the fellowing factors will show as the | d) cannot be predicted | under al fam dha ann adir a h-atara an | |
| 37) | which of the following factors will change the N_2 and O_2 ? | e value of equilibrium con | istant for the reaction between | |
| | a) increasing concentration of N_2 and O_2 | b) increasing pressure | | |
| 20) | c) increasing temperature | d) adding a catalyst | $f \Lambda = C = O^{2}$ | |
| 30) | which is the correct representation for the solution $\frac{1}{2}$ | $\frac{1}{2}$ ionity product constant of | $Ag_2 \cup I \cup 4$ | |
| | a) $[Ag^+]^2 [CrO_4^{2^-}]$ | b) $[Ag^+][CrO_4^{2^-}]^-$ | | |
| | c) $[2Ag^+][CrO_4^{2^-}]$ | d) $[2Ag^+]^2 [CrO_4^{2^-}]$ | | |
| 39) | The electronic configuration of an element is $1s^2 2s^2 2p^6 3s^2 3p^3$. What is the atomic number of an | | | |
| | element which is just below the above element | t in the periodic table? | 1) 40 | |
| | a) 33 b) 34 | c) 31 | a) 49 | |



| 55) | For production of beats, the two sources must be: | | | |
|-----|--|-----------------------|--------------------------------------|---------------------------------|
| | a) coherent of same free | quency | b) incoherent of same f | requency |
| | c) coherent of slightly of | different frequencies | d) incoherent of slightly | different frequencies |
| 56) | The electric field intensity at the surface of a charged conductor is: | | | |
| | a) zero | | b) directed normally to the surface | |
| | c) directed tangentially to the surface | | d) directed along 45° to the surface | |
| 57) |) Two bulbs one of 25 W 220 V and another of 100 W, 220 V are connected in series across 220 T | | | d in series across 220 V mains. |
| | The current: | | | |
| | a) through 25 W bulb is more | | b) through 100 W bulb is more | |
| | c) is same in the two bulbs | | d) is zero in the two bulbs | |
| 58) | Temperature coefficient of resistance of semiconductor is: | | | |
| | a) zero | b) constant | c) positive | d) negative |
| 59) | Which of the following can be used to generate Radiowaves? | | | |
| | a) Rectifier | b) Modulator | c) Amplifier | d) Oscillator |
| 60) | A ball of superconducting material is dipped in liquid nitrogen and placed near a bar magnet. In which | | | |
| | direction will it move? | | | |
| | a) away from bar magnet c) around the bar magnet | | b) towards the bar magnet | |
| | | | d) remain constant | |

<u>SECTION – B (2 marks)</u> (2*40=80)

Read the following passage and answer the questions given below (61-64):

Greyhound racing is the sixth most popular spectator sport in the United States. Over the last decade, a growing number of racers have been adopted to spend their retirement as household pets, once their racing careers are over.

Many people hesitate to adopt a retired racing greyhound because they think only very old dogs are available. Actually, even champion racers only work until they are about three-and-a-half years old. Because greyhounds usually live to be 12 to 15 years old, their retirement is much longer than their racing careers.

People worry that a greyhound will be more nervous and active than other breeds and will need a large space to run. These are false impressions. Greyhounds have naturally sweet, mild dispositions, and while they love to run, they are sprinters rather than distance runners and are sufficiently exercised with a few daily laps around a fenced-in backyard.

Greyhounds do not make good watchdogs, but they are very good with children, get along well with other dogs (and usually cats as well), and are affectionate and loyal. They are intelligent, well-behaved dogs, usually housebroken in only a few days. A retired racing greyhound is a wonderful pet for almost anyone.

| 61) | According to the passage, adopting a grey | hound is a good idea for people who: |
|-----|---|--------------------------------------|
| | a) do not have children. | b) live in apartments. |
| | c) do not usually like dogs. | d) already have another dog of |

d) already have another dog or a cat.

- 62) Which of the following is implied by the passage?
 - a) The public is more aware of greyhounds than they used to be.
 - b) Greyhounds are more competitive than other dogs.
 - c) Greyhound racing should not be allowed.
 - d) People who own pet rabbits should not adopt greyhounds.
 - One drawback of adopting a greyhound is that:
 - a) greyhounds are not good with children.
 - b) greyhounds are old when they retire from racing.
 - c) the greyhound's sensitivity makes it temperamental.
 - d) greyhounds are not good watch dogs.
- This passage is most like an advertisement because it: 64)
 - a) uses statistics to prove its point.

63)

- b) does not present information to substantiate its claims.
- c) says nothing negative about greyhounds.
- d) encourages people to do something.

| 65) | In a triangle ABC, if $\angle A = 30^\circ$, $b = 8$, $a = 6$ and $B = \sin^{-1} x$, then x is equal to: | | | |
|--------------|---|---|---|---------------------------------------|
| | a) 1 | b) 1/2 | c) 1/3 | d) 2/3 |
| 66) | If sin θ is geometric m | ean between sin ϕ and c | os ϕ , then $\cos 2\theta =$ | |
| | a) $2sin^2\left(\frac{\pi}{4}-\phi\right)$ | | b) $2cos^2\left(\frac{\pi}{4}-\phi\right)$ | |
| | c) $2cos^2\left(\frac{\pi}{4}+\phi\right)$ | | d) $2sin^2\left(\frac{\pi}{4}+\phi\right)$ | |
| 67) | $\lim_{x \to \frac{\pi}{2}} \left[x \tan x - \left(\frac{\pi}{2}\right) \sec x \right]$ | x] is equal to: | | |
| | a) 1 | b) -1 | c) 0 | d) $\pi/2$ |
| 68) | Let a function $f(x)$ be | defined by $f(x) = \frac{x - x }{ x }$ | $\frac{-1}{2}$ Then which of the fo | llowing is not true? |
| 00) | a) discontinuous at $r =$ | x = 0 | b) discontinuous at $x =$ | - 1 |
| | c) not differentiable at | r = 0 | d) not differentiable at | r = 1 |
| (0) | d $\begin{bmatrix} -1 & (\sqrt{x}(3-x)) \end{bmatrix}$ | $\lambda = 0$ | d) not uniterentiable at | n = 1 |
| 69) | $\frac{1}{dx} \left[\tan \left(\frac{1}{1-3x} \right) \right] =$ | | 2 | |
| | a) $\frac{1}{2(1+r)\sqrt{r}}$ | | b) $\frac{3}{(1+r)\sqrt{r}}$ | |
| | $\frac{2}{2}$ | | $d) \frac{3}{3}$ | |
| | $(1+x)\sqrt{x}$ | | $(1)_{2(1+x)\sqrt{x}}$ | |
| 70) | The curves $4x^2 + 9y^2$ | $= 72 \text{ and } x^2 - y^2 = 5$ | at $(3, 2)$: | |
| | a) touch each other 45° | | b) cut orthogonally d intersect at 60° | |
| -1 | c) intersect at 45 | | d) intersect at 60 | |
| 71) | If $\int_{\sqrt{2}} \frac{1}{x\sqrt{x^2-1}} = \frac{1}{12}$, then | 1 x 1s equal to: | | |
| | a) 1/2 | b) 2 | c) -3 | d) -1/2 |
| 72) | The area bounded by the | the semicircle $y = \sqrt{4} - x$ | x^2 and its diameter $y = \int_{-\infty}^{\infty} \frac{1}{2} \int_{$ | 0 is: |
| | a) 2π | b) <i>π</i> | c) $\frac{\pi}{2}$ | d) $\frac{\pi}{4}$ |
| 73) | If the coefficients of x^2 | x^2 and x^3 in the expansion | $1 \text{ of } (3 + ax)^9 \text{ are equal}$ | , then the value of a is: |
| | a) 3 | b) 9/7 | c) 7/9 | d) -3 |
| 74) | The standard deviation the new data is: | of a set of data is 10. If | each value is increased | by 5, the standard deviation of |
| | a) 5 | b) 10 | c) 15 | d) 20 |
| 75) | If $z = -\frac{2}{1+\sqrt{3}i}$, then va | alue of arg (z) is: | | |
| | a) <i>π</i> | b) $\frac{\pi}{3}$ | c) $\frac{2\pi}{3}$ | d) $\frac{\pi}{4}$ |
| 76) | The domain of the fund | $e^{\sqrt{5x-3-2x^2}}$ | is: | |
| , | a) $(1,\frac{3}{2})$ | | b) $\left[1,\frac{3}{2}\right]$ | |
| | (-, 2) | | $\frac{1}{2}$ | |
| 77) | The extremities of a dia | meter of a circle have co | ordinates $(-4, 3)$ and (12) | -1) The length of the intercept |
| , | which the circle makes | on v-axis is: | oraliates (1, 5) and (12, | <i>i)</i> The lengen of the intercept |
| | a) $\sqrt{13}$ | b) $2\sqrt{13}$ | c) $3\sqrt{13}$ | d) $4\sqrt{13}$ |
| 78) | The distance between t | the directrices of a rectai | ngular hyperbola is 10 u | nits, then the distance between |
| <i>,</i> | its foci is: | | | |
| | a) 10√2 | b) 5 | c) $5\sqrt{2}$ | d) 20 |
| 79) | If projection of the lin | e segment joining points | (a, 1, 0) and $(1, -2, 3)$ |) on a line which makes equal |
| | angles with three axes | is $\frac{2}{\sqrt{2}}$, then the value of ' | a' is: | |
| | a) 1 | b) 2 | c) 3 | 0 (b |
| 80) | M is the molecular we | eight of KMnO ₄ . The ec | uivalent weight of KM | nO_4 when it is converted into |
| <i>,</i> | K ₂ MnO ₄ is: | 0 | | |
| | a) M | b) M/3 | c) M/5 | d) M/7 |
| 81) | The Emf of the cell | $Mg Mg^{2+}(0.01 M) S $ | $n^{2+}(0.1 \text{ M}) \text{Sn} \text{ at } 298$ | K is: (Given, $E^0_{Mg^{2+},Mg} =$ |
| | $-2.34 \text{ V}, \text{E}^{0}_{\text{Sn}^{2+},\text{Sn}} = -0.14 \text{ V})$ | | | |
| | a) 2.17 V | b) 2.23 V | c) 2.57 V | d) 2.45 V |

A first order reaction is 75% complete after 32 minutes. When was 50% of the reaction completed? 82) c) 16 min a) 4 min b) 8 min d) 32 min An organic compound made of C, H and N contains 20% nitrogen. Its molecular weight is: 83) a) 70 b) 140 c) 100 d) 65 Which one of the transition metal ions is coloured? 84) c) *Sc*³⁺ d) *V*⁴⁺ b) *Zn*²⁺ a) *Cu*⁺ One gas bleach the colours of flowers by reduction and the other by oxidation. The two gases are 85) respectively: a) Cl_2 and SO_2 b) Br₂ and H₂S c) SO₂ and Cl₂ d) NH₃ and SO₂ $C_2H_2 \xrightarrow{\text{HgSO}_4/\text{H}_2\text{SO}_4,\text{H}_2\text{O}} X \rightleftharpoons Y.$ Here, Y is: 86) a) CH₃CH₂OH b) $CH_2 = CH - OH$ c) CH₃CH₂CHO d) CH₃CHO 87) Propanal on treatment with dil. NaOH forms: a) CH₃CH₂CH₂CH₂CH₂CH₂CHO b) CH₃CH₂CH(OH)CH₂CH₂CHO c) CH₃CH₂CH₂CH(OH)CH₂CHO d) CH₂CH₂CH(OH)CH(CH₃)CHO A string passing over a pulley contains 10 kg and 6 kg masses connected at its ends. The 6 kg mass 88) hangs vertically, while 10 kg block is placed on the table. If the system is in dynamic equilibrium, i.e., moves with constant speed, the coefficient of dynamic friction is: b) 0.6 a) 0.3 c) 0.10 d) 1.67 89) A thin circular disc of mass M and radius R rotating about its axis with a constant angular velocity ω . Two objects each of mass m are attached gently to the opposite ends of the diameter of the disc. The disc now rotates with an angular velocity: a) $\frac{\omega M}{M+m}$ a) $\frac{\omega M}{M+m}$ b) $\frac{\omega M}{M+2m}$ c) $\frac{\omega M}{M+4m}$ d) $\frac{\omega (M-2m)}{M+2m}$ Escape velocity of a body from earth is about 11 km/s. Assuming the mass and radius of earth to be b) $\frac{\omega M}{M+2m}$ 90) about 81 and 4 times the mass and radius of moon respectively, the escape velocity in km/s from the surface of moon will be: a) 0.54 b) 2.44 c) 11 d) 49.5 91) A particle executes S.H.M. Its velocities are v_1 and v_2 at displacements x_1 and x_2 from the mean position. The period of oscillation will be: a) $2\pi \sqrt{\left(\frac{x_2^2 - x_1^2}{v_1^2 - v_2^2}\right)}$ b) $2\pi \sqrt{\left(\frac{v_1^2 - v_2^2}{x_2^2 - x_1^2}\right)}$ d) $2\pi \sqrt{\left(\frac{v_1^2 + v_2^2}{x_2^2 + x_1^2}\right)}$ c) $2\pi \sqrt{\left(\frac{x_2^2 + x_1^2}{v_1^2 + v_2^2}\right)}$ 92) Assuming no heat losses, the heat released by the condensation of x gm of steam at 100°C can be used to convert y gm of ice at 0°C into water at 100°C, the ratio of x: y is: a) 1:1 b) 1:2 c) 1:3 d) 3:1 93) Heat is flowing through two cylindrical rods of same material. The diameters of the rods are in the ratio 1:2 and their lengths are in the ratio 2:1. If the temperature difference between their ends is same, then the ratio of amounts of heat conducted through them per unit time will be: a) 1:1 b) 2:1 c) 1:4 d) 1:8 A biconvex lens has a focal length 2/3 times the radius of curvature of either surface. The refractive 94) index of the lens is: a) 1.75 b) 1.33 c) 1.5 d) 1.0 In Young's double slit experiment carried out with light of wavelength $\lambda = 5000$ Å, the distance 95) between the slits is 0.2 mm and the screen is 2.00 metre away from the slits. The central maximum is at n = 0. The third maximum will be at a distance x (from central maximum) equal to: a) 1.67 cm b) 1.5 cm c) 0.5 cm d) 5.0 cm

- 96) An object producing a pitch of 400 Hz flies past a stationary person. The object was moving in a straight line with a velocity 200 m/s. The velocity of sound is 300 m/s. The frequency of sound heard by the stationary person when the object is approaching him, is equal to:
 a) 240 Hz
 b) 96 Hz
 c) 1200 Hz
 d) 960 Hz
- 97) Two-point charges +9e and +e is kept at distance 'a' from each other. A third charge is placed at distance 'x' from +9e on the line joining the above two charges. For the third charge to be in equilibrium, 'x' should be:
 a) a b) a/2 c) 3a/4 d) 3a/8
- 98) In the circuit shown below, what is the value of unknown resistor 'R' so that the total resistance of the circuit between points P and Q is also equal to R?

a) 3 Ω b) $\sqrt{39} \Omega$ c) $\sqrt{69} \Omega$ d) 10 Ω

99) An LR circuit consists of a resistance of 50 Ω and a coil of inductive reactance 120 Ω . If the circuit is connected across 260-volt ac mains, the current in the circuit is:

a) 2 A b)
$$\frac{26}{17}$$
 A c) $\frac{26}{5}$ A d) $\frac{13}{6}$ A

100) The wavelength of radiation emitted is λ_0 , when an electron jumps from the third to the second orbit of hydrogen atom. For the electron jump from the fourth to the second orbit of the hydrogen atom, the wavelength of radiation emitted will be:

a)
$$\frac{16}{25}\lambda_0$$
 b) $\frac{20}{27}\lambda_0$ c) $\frac{27}{20}\lambda_0$ d) $\frac{25}{16}\lambda_0$

*** Thank You!!! ****