

WRITTEN TEST FOR NON-FACULTY RECRUITMENT

| Application No | |
|----------------|--|
| | |

Date:

Total Max. Marks: 100

Duration: Two Hours

Part-1: General Intelligence (Max. Marks: 40) Part-2: Domain Knowledge (Max. Marks: 60)

> Part-2A: Objective Type (Max. Marks: 40) Part-2B: Descriptive Type (Max. Marks: 20)

INSTRUCTIONS

- 1. The question paper cum answer sheet is in the form of test booklet.
- 2. Each objective question has four multiple options as (a), (b), (c) and (d) with one correct answer. Answer to be filled in the box provided against each objective question.
- 3. All objective questions carry one mark each, and descriptive type questions carry 10 marks each.
- 4. Multiple answers for objective question will be regarded as wrong answer.
- 5. Enter your application number correctly.
- 6. Enter all information as per the instructions given in the test booklet.
- 7. Space available in the test booklet could be used for rough work, if required.

 No separate sheet will be provided.
- 8. At the end of the written test, booklet shall be returned to the invigilator.



Written Test for Junior Engineer (Electrical)

| Part-1: Gener | al Intelligence (Object | ctive Type) | (Max. Marks: 40) |
|--|---|---|---------------------------------|
| Q1) Find the odd (3, 5, 7, 12, 17, | one out in the follow | ing sequence | , |
| (a) 19 | (b) 12 | (c) 17 | (d) 5 |
| Q2) A truck covers | s a distance of 550 m 5 minutes. The ratio o | neters in 1 minute w | hereas bus covers a distance |
| (a) 3:4 | (b) 4:3 | (c) 3 : 5 | (d) 5:3 |
| Q3) If the mean of three observati | 5 observations x , x +ons is | -2, $x+4$, $x+6$ and $x+8$ | is 11, then the mean of las |
| (a) 11 | (b) 15 | (c) 13 | (d) 17 |
| weight and thu | s gains $6\frac{10}{47}$ %. For a k | ell his goods at cos kg he uses a weight o | t price. But he uses a false |
| (a) 940 gms | (b) 947 gms | (c) 953 gms | (d) 960gms |
| Q5) A student has failed by 40 ma | to obtain 33% of th rks. The maximum n | ne total marks to pa narks are | ass. He got 125 marks and |
| (a) 300 | (b) 500 | (c) 800 | (d) 1000 |
| Q6) If the side of the side of the squa | ne square is increased re is | d by 5 cm; the area i | increases by 165 sq cm. The |
| | (1) 10 | (c) 14 cm | (d) 15 cm |
| Q7) ´x´ varies inver will be equal to | sely as square of y_* | Given that $y=2$ for z | x=1. The value of x for $y=6$ |
| (a) 3 | (b) 9 | (c) 1/3 | (d) 1/9 |
| Q8) A sum of mone same rate of sim | ey amounts to ₹ 9800 ple interest. The rate | 0 after 5 years and | ₹ 12005 after 8 years at the |
| (a) 5% | (b)8% | (c) 12% | (d) 15% |
| Q9) Exercise is to ol | esity as water is to | | |
| (a) Thirst | (b)Alcohol | (c) Drink | (d) Purity |
| Q10) The least numl (a) 2 | per by which 294 mu (b)3 | st be multiplied to n (c) 6 | nake it a perfect square (d) 24 |

| Q11) A man is 24 The present ag | years older than the | nis son. In two year | rs his age will be tw | vice his son. |
|--|--|---|--|---------------|
| (a) 14 years | (b)18 years | (c) 20 years | (d) 22 years | |
| Q12) Choose the b | est alternative base | d on analogy | | |
| Quartz : Radio | | | | |
| (a) Glass | (b) Porcelain | (c) Cement | (d) Powder | |
| Q13) Choose the b A river always | | | | |
| (a) Delta | Tids | (b) Triber | tania. | |
| (c) Banks | | (b) Tribu (d) Fishe | | |
| Q14) Choose the o | dd one | | | |
| (a) Calendar | | (b) Mont | h | |
| (c) Date | | (d) Year | | |
| Q15) If cushion is called cover; w | alled <i>pillow, pillow</i> i hich will be spread | s called <i>mat, mat</i> is | called <i>bed-sheet</i> and | bed-sheet is |
| (a) Cover | 1 | (b) bed-sh | eet | |
| (c) Mat | | (d) Pillou | | |
| Q16) In a certain 1 and '637' mean (a) 9 | anguage, '479' meas 'eat fruit daily'. WI (b)7 | ans 'fruit is sweet'; nich digit stands for (c) 4 | '248' means 'very s r 'is' in that code? (d) 6 | weet voice'; |
| Q17) Which of the | following words is | closest in meaning | to loguacious | |
| (a) Thirsty | 0 | (b) Shyne | | |
| (c) Beautiful | | (d) Talka | | |
| Q18) Which of the | following words is: | most nearly opposi | te of ahvidae | |
| (a) Detest | 0 | (b) Shorte | en | |
| (c) Extend | | (d) Easy | A1 | |
| Q19) The absence o | f law and order is | | | |
| (a) Decorum | | (b) Rebell | ion | |
| (c) Mutiny | | (d) Anarc | | |
| | | () |) | |
| Q20) Nobel Laureat | te Aung San Sui Ky | i is State Counsello | r of which nation? | |
| (a) Japan | · · | (b) Malay | | |
| (c) Thailand | | (d) Myanı | | |
| | cated on the banks of | which river | | |
| (a) Gomti | (b) Yamuna | (c) Ganges | (d) Saryu | |

| Q22) Dachigam Sanctuary in Kash (a) Snow Leopard | umir is protected site for | |
|---|--|----------------------------|
| (b) One horned Rhino | | |
| (c) Hangul | | |
| (d) Indian Tiger | | |
| Q23) Who among the following was Bengal? (a) Lord William Bentick | as the Viceroy of India at the time of pa | rtitioning of |
| (b) Lord Canning (c) Lord Ripon (d) Lord Curzon | | |
| Q24) National Science day is celebra | ated in India on | |
| (a) 28 th February | (b) 15 th September | |
| (c) 15 th March | (d) 4th July | |
| Q25) 2024 Summer Olympics will b | e held in | |
| (a) Los Angeles (b) Toky | | |
| Q26) Who among the following re NITI Aayog in order to return to (a) Raghuram Rajan | | hairman of |
| (c) Arvind Subramanian | (b) Arvind Panagariya (d) Jagdish Bhagwati | |
| Q27) Who among the following wa Nawaz Sharif was disqualified allegations. | s appointed as the Prime Minister of Pa by the country's Supreme Court over | kistan after corruption |
| (a) Shahid Khaqan Abbasi | (b) Shahbaz Sharif | |
| (c) Maryam Sharif | (d) Bilawal Bhutto | |
| Q28) Which foreign dignitary along Bullet train project | with PM Narendra Modi inaugurated l | India's first |
| (a) Xi Jinping | (b) Lee Nak-yeon | |
| (c) Li Keqiang | (d) Shinzo Abe | |
| Q29) Gross National Happiness (GNP) | was first mentioned in the constitution | of |
| (a) Switzerland (b) USA | (c) Bhutan (d) Israel | OI |
| Q30) Which word can be substituted A name adopted by an au | d for the given sentence | |
| (a) Nickname | (b) Pseudonym | |
| (c) Ghost-writer | (d) Nomenclature | |
| Q31) Which is the largest state in Ind | lia | |
| (a) Rajasthan | (b) Madhya Pradesh | |
| (c) Maharashtra | (d) Uttar Pradesh | |

| Q32)Study of birds is known as (a)Oncology (c)Orology | . (b) Ophthalmology (d) Ornithology | |
|--|---|------------|
| Q33) Which of the following is no (a) Joystick (c) Plotter | ot an input device (b) Mouse (d) Keyboard | |
| Q34) A step by step procedure to s (a) Algorithm (c)Function | solve a particular problem is known as (b) Program (d) Subroutine | |
| Q35) Which of the following states (a) A program is a sequence of (b) An algorithm is dependent (c) An algorithm can be writted (d) A program is implementated | of instructions to the computer. It on the programming language. In any language. | |
| Q36) WAN stands for (a) Wide Area Network (b) Wireless Area Network (c) Wireless Activated Networ (d) Wireless Arranged Networ | rk. rk | |
| Q37) A computer program that co | onverts an entire program into machine la | inguage is |
| (a) Interpreter (c)Emulator | (b) Compiler (d) Simulator | |
| Q38) A byte consists of bit | es. | |
| (a) 4 (b) 6 | (c) 8 (d) 16 | |
| Q39) Undo in MS- Word is similar (a) Ctrl+X | to (b) Ctrl+C | |
| (c) Ctrl+Z | (d) Ctrl+D | |
| Q40) Operating System is (a) Application Software (c) Programming language | (b) System Software (d) High Level language | |

| Part-2A: Dom | ain Knowledge | (Objective Ty | pe) (Max. M | arks: 40) |
|--|---|---------------------------------|---|----------------------|
| Q41) Low power (a) incandeso (c) arc lamps | ent lamp | y <u>not</u> due to | (b) induction motor (d) fluorescent tubes | |
| Q42) A fuse is inse (a)neutral (c) phase | erted in | | (b) earth continuity conductor (d) both phase and neutral | r |
| Q43) The rating of (a) KVA | a transformer (b) KW | is expressed ii (c) HF | | |
| Q44) Kirchoff's La (a) DC circuits (c) Circuits wit | only | | (b) AC circuits only (d) Both AC and DC circuits | |
| Q45) The time cons (a) 2 s | stant for an <i>RL</i> (b) 4 s | circuit with <i>R</i> (c) 6 s | = 2Ω and $L = 4$ henry is (d) $8 s$ | |
| Q46)Short circuit (a) Core losses (c) Ohmic Loss | at any load | mer is conduc | ted to obtain (b) Hysteresis loss only (d) Eddy Current Loss only | |
| on each limb w | e transformer | e low voltage are 38. The nu | winding of a single phase, 660 Imber of turns of high voltage | 00/500 V, winding |
| (a) 239 | (b) 257 | (c) 125 | (d) 250 | |
| Q48) The power factor (a) X/Z | | (c) <i>X/F</i> | R (d) R/Z | |
| Q49) The main purpose (a) Decrease iron (b) Prevent edd; (c) Eliminate material (d) Decrease relationships (d) Decrease relationships (d) Prevent edd; (e) Decrease relationships (d) D | n loss y current loss agnetic hystere | sis | | |
| Q50) The number of (a) one | f cores in a sing (b) two | gle-phase shell (c) three | type transformer are | |

| Q51) An alternation the following with the same | direct voltages, i | aximum value 100V f applied to the lamp | is applied to a lamp o, would cause the la | . Which of mp to light |
|---|--|--|---|------------------------|
| (a) 100V | (b) 63.7V | (c) 70.7V | (d) 141.4V | |
| Q52) The protective called | e device of a tra | nsformer, which extr | acts the moisture from | m the air is |
| (a) Conservato (c) Bushings | r | (b) Breą (d)Buch | ther holz's relay | |
| (b) an overexci (c) an under- e (d) an overexci | static capacitor ited synchronou xcited synchron ited synchronou | s motor driving mechous motor driving mess s motor running with | echanical load nout mechanical load | |
| Q54) Total losses of efficiency are 20 (a) 2000 W | occurring in a toccurring in a | copper losses at this | is operating at its load are (d) 800 W | maximum |
| Q55) In a Y-Y syste (a) 381 V | m, a line voltage (b) 311 V | e of 220 V produces a (c) 220 V | phase voltage of: (d) 127 V | |
| Q56) Distribution to (a) >copper los (c) < copper los | S | e core losses (b) =copper loss (d) =1/2 (coppe | | |
| Q57) A charge of 24 (a) 120A | 0 C is transferre (b) 480A | d in 2 minutes. The c | urrent flowing is: (d) 8A | |
| Q58) The voltage action (a) Capacitor. | ross (b) Inductor | cannot change abrup (c) Resistor | otly (d) Thermistor | |
| Q59)The back emf and running at | of a DC motor v N rpm is given | with P poles, Z condo by | uctors, a No. of paral | lel paths, |
| (a) $\frac{PN\Phi Z}{60a}$ | D. T | **** | (d) $\frac{PNZ}{a}$ | |
| Q60) Out of the follo (a) DC motor (c) DC generator | | chine is also known a (b) Induction Mo (d) Synchronous | | former |

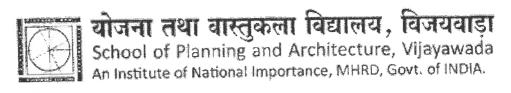
| Q61) The fifth band | l in color coded r | esistor indicates | | |
|--|--|---|--|----------------------------|
| (a)Reliability | (b) Strength | (c) Tolerance | (d) Power ratir | ng |
| Q62) Conducting m | naterial normally | used for standard resis | okom na 11. i | |
| (a) manganin | (b) nichrome | (c)tungsten | (d) copper | |
| Q63) The root me simultaneously value 10 A. | an square value a direct current o | of resultant current f 10A, and a sinusoida | t in a wire whi I alternating curre | ich carries ent of peak |
| (a)14.4 | (b) 7.07 | (c) 11.4 | (d) 12.2 | |
| (a)Full brightne | ts secondary is lef | nected in series with post open circuited then to the control (b) poor brist (d) more the control (d) | he bulb would ha | ve |
| (a) the load residuely (b) the load residuely (c) the load residuely | stance is very larg stance is very sma | all source resistance | d when | |
| Q66) When a 400-Hz (a) reduced to 1, (c) unaffected | z transformer is op /8 | perated at 50 Hz, its ra (b) increased (d) increased | d 8 times | |
| O67) Window type | Ce are use for re | omas and afficient till | | |
| (a) 50 sq m | (b) 200 sq m | oms and offices with a (c)100 sq m | rea approximatel (d) 20 sq m | y upto |
| (a) if can be over | excited | a doubly excited mac | hine because | |
| (b) it has two set(c) both its rotor(d) it needs twice | s of rotor poles and stator are exc e the normal excit | rited ing current | | |
| Q69) is | s the commonly | observed temperatur | re of air by con | ventional |
| (a) Dry Bulb temp (c) Latent heat eff | | (b) Wet Bulb (d) Sensible I | | |
| Q70) Central AC Plar (a) 5 | nts are most econo (b) 50 | omical for AC loads of (c)2 | more than (d) 20 | ton |

| Q71) is the t | temperature o | f saturation of air | | |
|--|-----------------|----------------------------|-------------------|-----------|
| (a) Relative Humidity | y · | (b) Absolute H | lumidity | |
| (c) Dew Point | , | (d) Latent heat | • | |
| | | (w) Zatorit ricat | CITCE | |
| Q72) The solid angle sub diameter 1.2 m | tended by an | area of 2400 sq cm on t | he surface of a | sphere of |
| (a) 3/2 | (b) $1/3$ | (c)2/3 | (d) $2/5$ | |
| Q73) The total quantity as | of light emi | tted per second by a | light source is | s known |
| (a) Luminous flux | | (b) Luminous I | ntanaitre | |
| (c) Illumination | | (d) Luminance | mensity | |
| () | | (a) Lummance | | |
| Q74) The sum of reflection material is | on factor, abs | corption factor and trar | smission factor | for any |
| (a) Equal to zero | | (b) Less than ze | 240 | |
| (c) Equal to unity | | (d) Greater that | | |
| · · · | | (a) Greater than | ii uriiiy | |
| Q75) Which of the following | ing lamps are | particularly suitable in t | fog? | |
| (a) Mercury vapour la | mps | (b) Sodium Vap | og: Jour Lampa | |
| (c) Compact Fluoresce | | (d) Incandescer | | |
| . , , , , , , , , , , , , , , , , , , , | — | (d) incaridescer | ii Lamps | |
| Q76) Lux is the unit for th | ie measiiremei | nt of | | |
| (a) Luminous flux | | (b) Luminous Ir | atonoity | |
| (c) Illumination | | (d) Luminance | Hensity | |
| . , | | (a) Lummance | | |
| Q77)Step potential and To | ouch potential | are associated with | | |
| (a) High Voltage Trans | smission | (b) Earthing of S | Sylvation | |
| (c) Rise in receiving en | id voltage | | | |
| () | id rottuge | (d) Dip in Distri | button voitage | |
| Q78) The Diesel Power Pla | ant are mainly | ineed as | | |
| (a) Peak Load plant | are are mainly | | | |
| (c) Stand by plant | | (b) Base Load Plant | 11 1 . | |
| (s) starta by prant | | (d) Both peak and Stan | d by plants | |
| Q79) The cetane number o | of Diesel fuels | oro monolly in the server | - (| |
| (a) 10-200 | Dieser ruers | | OI | |
| (c) 30-60 | | (b) 20-400 | | |
| (5) 55 55 | | (d) 10-20 | 2 | |
| Q80) One kWh of electrical | l energy ogral | lo. | Ì | j |
| (a) 3600 J | (b) 860 kcal | | (1) 440.5 | |
| (4) 5555) | (b) ooo Kcal | (c) 3600 W | (d) 4186 J | |

Part-2B: Domain Knowledge (Descriptive Type)

(Max. Marks: 20)

Answer Key



WRITTEN TEST FOR NON-FACULTY RECRUITMENT

| Application No | |
|----------------|--|
| | |

Date:

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Duration: Two Hours

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Part-2A: Objective Type (Max. Marks: 40)

Part-2B: Descriptive Type (Max. Marks: 20)

INSTRUCTIONS

- 1. The question paper cum answer sheet is in the form of test booklet.
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- 4. Multiple answers for objective question will be regarded as wrong answer.
- 5. Enter your application number correctly.
- 6. Enter all information as per the instructions given in the test booklet.
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- 8. At the end of the written test, booklet shall be returned to the invigilator.



Written Test for Junior Engineer (Electrical)

| | William Test 101 | <i>y</i> | · | |
|---|--------------------------------------|------------------------------------|------------------------|----------------|
| Part-1: Genera | al Intelligence (Obj | ective Type) | (Max. Ma | arks: 40) |
| Q1) Find the odd o | one out in the follo | wing sequence | | В |
| 3, 5, 7, 12, 17, (a) 19 | 19 (b) 12 | (c) 17 | (d) 5 | В |
| Q2) A truck covers a distance of 550 meters in 1 minute whereas bus covers a di | | | | |
| of 33 Kms in 45 (a) 3:4 | 5 minutes. The rat (b) 4 : 3 | io of their speeds is (c) 3 : 5 | (d) 5:3 | A |
| (O3) If the mean of | f 5 observations x_i | x + 2, x + 4, x + 6 and x | +8 is 11, then the m | ean of last |
| three observat (a) 11 | | (c) 13 | (d) 17 | С |
| OA) A dishonest d | ealer professes to | sell his goods at cost p | orice. But he uses a f | alse weight |
| and thus gains | $66\frac{18}{47}$ %. For a kg h | e uses a weight of | | A |
| | (b) 947 gms | (c) 953 gms | (d) 960gms | |
| OF) A standard have | s to obtain 33% of | the total marks to pas | ss. He got 125 mark | s and failed |
| by 40 marks. (a) 300 | The maximum ma (b) 500 | rks are (c) 800 | (d) 1000 | В |
| | the equare is incr | eased by 5 cm; the ar | ea increases by 165 | sq cm. The |
| side of the squ (a) 12 cm | the square is more are is (b) 13 cm | (c) 14 cm | (d) 15 cm | C. |
| O7\'\'\' waries inv | erselv as square o | fy. Given that $y=2$ for | x=1. The value of x | for $y=6$ will |
| be equal to | (b) 9 | (c) 1/3 | (d) 1/9 | D |
| | onove amounts to | ₹ 9800 after 5 years a | and ₹ 12005 after 8 | years at the |
| same rate of s | simple interest. Th | ie rate of interest per a | alillulli 15 | С |
| (a) 5% | (b)8% | (c) 12% | (d) 15% | |
| 09) Evercise is to | o obesity as water | is to | | A |
| (a) Thirst | (b)Alcohol | (c) Drink | (d) Purity | |
| O10) The least n | umber by which 2 | 94 must be multiplied | d to make it a perfec | ct square |
| (a) 2 | (b)3 | (c) 6 | (d) 24 | C |

| Q11) A man is 24 | years older than to ge of the son is | his son. In two years | s his age will be tw | rice his son. |
|----------------------|---|--|-----------------------------|---------------|
| (a) 14 years | (b)18 years | (c) 20 years | (d) 22 years | D |
| Q12) Choose the b | est alternative base | ed on analogy | | , L |
| | :: Gypsum : ? | 07 | | С |
| (a) Glass | (b) Porcelain | (c) Cement | (d) Powder | |
| Q13) Choose the b | | | | |
| A river always | s has | | | |
| (a) Delta | | (b) Tribut | | C |
| (c) Banks | | (d) Fishes | 3 | |
| Q14) Choose the o | odd one | | | |
| (a) Calendar | | (b) Montl | n | A |
| (c) Date | | (d) Year | | |
| Q15) If cushion is c | alled pillow, pillow | is called <i>mat</i> , <i>mat</i> is o | called <i>bed-sheet</i> and | bed-sheet is |
| (a) Cover | hich will be sprea | | t | В |
| (c) Mat | | (b) bed-she (d) Pillow | | Ь |
| , , | | , , | | |
| Q16) In a certain la | anguage, '479' mea | ns 'fruit is sweet'; '248 | 3' means 'very sweet | voice'; and |
| '637' means 'ea | t fruit daily'. Which | digit stands for 'is' | in that code? | A |
| (a) 9 | (b)7 | (c) 4 | (d) 6 | |
| Q17) Which of the | following words i | s closest in meaning | to loguacious | |
| (a) Thirsty | O | (b) Shyne | - | D |
| (c) Beautiful | | (d) Talkat | | |
| Q18) Which of the | following words is | s most nearly opposi | te of <i>ahridge</i> | |
| (a) Detest | | (b) Shorte | | C |
| (c) Extend | | (d) Easy | | |
| O19) The absence of | of law and order is | | | |
| (a) Decorum | or iaw aria oraci is | (b) Rebelli | ion | D |
| (c) Mutiny | | (d) Anarcl | | |
| | | | | |
| Q20) Nobel Laurea | ite Aung San Sui K | yi is State Counsello | r of which nation? | |
| (a) Japan | | (b) Malays | | D |
| (c) Thailand | | (d) Myanr | nar | |
| Q21) Lucknow is lo | cated on the banks o | of which river | | |
| (a) Gomti | (b) Yamuna | (c) Ganges | (d) Saryu | A |
| | | | - | |
| | | | | |

2,0

| Q22) Dachigam Sanctuary in Kashmir is | protected site for | |
|--|------------------------------------|-------------------|
| (a) Snow Leopard | | С |
| (b) One horned Rhino | | |
| (c) Hangul | | |
| (d) Indian Tiger | | |
| Q23) Who among the following was the | Vicerov of India at the time of | partitioning of |
| Bengal? | | |
| (a) Lord William Bentick | | D |
| (b) Lord Canning | | |
| (c) Lord Ripon | | |
| (d) Lord Curzon | | |
| Q24) National Science day is celebrated in | n India on | A |
| (a) 28 th February | (b) 15 th September | 11 |
| (c) 15 th March | (d) 4 th July | |
| | | |
| Q25) 2024 Summer Olympics will be hel | d in | C |
| (a) Los Angeles (b) Tokyo | (c) Paris (d) Madrid | |
| Q26) Who among the following recently | resigned from the post of vice-ch | airman of NITI |
| Aayog in order to return to academi | a? | |
| (a) Raghuram Rajan | (b) Arvind Panagariya | В |
| (c) Arvind Subramanian | (d) Jagdish Bhagwati | |
| • | | 6 m 3 4 6 |
| Q27) Who among the following was ap | pointed as the Prime Minister of | f Pakistan atter |
| Nawaz Sharif was disqualified by | the country's Supreme Court of | |
| allegations. | (b) Shahbaz Sharif | A |
| (a) Shahid Khaqan Abbasi | (d) Bilawal Bhutto | |
| (c) Maryam Sharif | (a) Blawar Brace | |
| Q28) Which foreign dignitary along wi | th PM Narendra Modi inaugura | ted India's first |
| Bullet train project | _ | |
| (a) Xi Jinping | (b) Lee Nak-yeon | D |
| (c) Li Keqiang | (d) Shinzo Abe | |
| (22.77) | | line of |
| Q29) Gross National Happiness (GNP) w | as first mentioned in the constitu | C |
| (a) Switzerland (b) USA | (c) Bhutan (d) Israel | |
| Q30) Which word can be substituted for | or the given sentence | |
| A name adopted by an author | or in his writings | В |
| (a) Nickname | (b) Pseudonym | |
| (c) Ghost-writer | (d) Nomenclature | |
| , | | |
| Q31) Which is the largest state in India | (1) M II D I - I | A |
| (a) Rajasthan | (b) Madhya Pradesh | A |
| (c) Maharashtra | (d) Uttar Pradesh | |

| Q32)Study of birds is known as (a)Oncology (c)Orology | (b) Ophthalmology (d) Ornithology | D |
|---|--|------------|
| Q33) Which of the following is <u>not</u> are (a) Joystick (c) Plotter | n input device (b) Mouse (d) Keyboard | С |
| Q34) A step by step procedure to solv (a) Algorithm (c)Function | ve a particular problem is known as (b) Program (d) Subroutine | A |
| Q35) Which of the following statement (a) A program is a sequence of in (b) An algorithm is dependent or (c) An algorithm can be written in (d) A program is implementation | nstructions to the computer. In the programming language. In any language. | В |
| Q36) WAN stands for (a) Wide Area Network (b) Wireless Area Network (c) Wireless Activated Network. (d) Wireless Arranged Network | | A |
| Q37) A computer program that conv | verts an entire program into machine la | inguage is |
| (a) Interpreter (c)Emulator | (b) Compiler (d) Simulator | В |
| Q38) A byte consists of bits (a) 4 (b) 6 | (c) 8 (d) 16 | С |
| | , , | |
| Q39) Undo in MS- Word is similar to (a) Ctrl+X (c) Ctrl+Z | (b) Ctrl+C (d) Ctrl+D | С |
| Q40) Operating System is | | |
| (a) Application Software (c) Programming language | (b) System Software (d) High Level language | В |

| Part-2A: Dom | ain Knowledge (O | bjective Type) | (Max. Ma | arks: 40) |
|---|---|-------------------------------------|--|-----------|
| Q41)Low power (a)incandeso (c) Arc lamp | * | (b) ind | uction motor orescent tubes | A |
| Q42) A fuse is ins (a)neutral (c) phase | erted in | , , | th continuity conducto h phase and neutral | r C |
| , Q43) The rating o (a) KVA | f a transformer is (b) KW | expressed in (c) HP | (d) W | A |
| (a) DC circuit | aws are applicable s only ith rectified AC su | (b) AC | circuits only th AC and DC circuits | D |
| Q45) The time cor (a) 2 s | nstant for an <i>RL</i> ci (b) 4 s | rcuit with $R = 2 \Omega$ a (c) 6 s | and $L = 4$ henry is (d) 8 s | A |
| Q46)Short circuit (a) Core losses (c) Ohmic Los | s at any load | ` ' ' | obtain steresis loss only dy Current Loss only | С |
| | | _ | ng of a single phase, 66 of turns of high voltag | |
| on each limb (a) 239 | | (c) 125 | (d) 250 | D |
| Q48) The power f (a) X/Z | actor is ratio of (b) \mathbb{Z}/\mathbb{X} | (c) X/R | (d) <i>R</i> / <i>Z</i> | D |
| (a) Decrease in (b) Prevent ed (c) Eliminate i | ron loss ldy current loss magnetic hysteres | | is to | D |
| , , | eluctance of the n | | two not own or are | С |
| (a) one | of cores in a sing. (b) two | le-phase shell type (c) three | transformer are (d) five | |

| | | | applied to a lamp. Whald cause the lamp to | |
|--|--|---|--|--------------|
| the same brillia (a) 100V | nce? (b) 63.7V | (c) 70.7V | (d) 141.4V | С |
| | e device of a trans | former, which extra | acts the moisture from | the air is |
| called (a) Conservator (c) Bushings | : | (b) Breat (d)Buchl | her holz's relay | В |
| (b) an overexci (c) an under- e | static capacitor b ted synchronous xcited synchronou | motor driving mech us motor driving me | | D |
| | 0 | ansformer when it opper losses at this (c) 1500 W | is operating at its r load are (d) 800 W | maximum B |
| Q55) In a Y-Y syste (a) 381 V | m, a line voltage ((b) 311 V | of 220 V produces a (c) 220 V | phase voltage of: (d) 127 V | D |
| Q56) Distribution t (a) >copper los (c) < copper los | SS | core losses (b) =copper loss (d) =1/2 (coppe | | С |
| Q57) A charge of 24 (a) 120A | | l in 2 minutes. The c (c) 2A | urrent flowing is: (d) 8A | С |
| | cross(b) Inductor | cannot change abruj (c) Resistor | ptly (d) Thermistor | A |
| | of a DC motor w N rpm is given b | | uctors, a No. of para | llel paths, |
| (a) $\frac{PN\Phi Z}{60a}$ | | | (d) $\frac{PNZ}{a}$ | A |
| Q60)Out of the foll | lowing which mad | chine is also known | as a generalized trans | sformer |
| (a) DC motor (c) DC generato | - | (b) Induction M (d) Synchronou | lotor | В |

| Q61) The fifth band in color coded resistor indicates | | | | |
|---|---|-----------------------|---|---------------|
| (a)Reliability | (b) Strength | (c) Tolerance | (d) Power rating | |
| | | | | |
| Q62) Conducting m | naterial normally us | sed for standard resi | istance coils is | A |
| (a) manganin | (b) nichrome | (c)tungsten | (d) copper | |
| • | | | | |
| simultaneously | _ | | nt in a wire which al alternating curren | |
| value 10 A. | (1) [7] [7] | /_\ 11 / | (4) 10 0 | D |
| (a)14.4 | (b) 7.07 | (c) 11.4 | (d) 12.2 | |
| Q64) One 200 V, 100 W bulb is connected in series with primary of a 200 V, transformer. If its secondary is left open circuited then the bulb would have (a) Full brightness (b) poor brightness (c) a little less than full brightness (d) more than full brightness | | | | |
| • | | rom a source to a lo | ad when | |
| \ / | istance is very large | | | D |
| | istance is very sma | | | |
| * * | istance is twice the sistance equals the s | | | |
| (a) the road rec | interior equals tire | | | |
| Q66) When a 400-H | Iz transformer is op | perated at 50 Hz, its | rating is | A |
| (a) reduced to | 1/8 | ` ' | sed 8 times | |
| (c)unaffected | | (d) increas | sed 64 times | 20 |
| O67) Window type | ACe are use for ro | ome and offices with | h area approximately | 7 11DtO |
| (a) 50 sq m | (b) 200 sq m | (c)100 sq m | | D |
| (4) 50 54 | (-) | (*)*********** | (/ 1 | |
| Q68) A synchronou (a) it can be ov | | a doubly excited m | achine because | |
| (b) it has two s | ets of rotor poles | | | С |
| , , | or and stator are exc | | | |
| (d) it needs twi | ice the normal excit | ing current | | |
| Q69)thermometer | is the commonly | observed tempera | ature of air by con | ventional |
| (a) Dry Bulb ter | mperature | (b) Wet Bi | ulb temperature | A |
| (c) Latent heat | ~ | , , | le heat effect | |
| | | | | |
| | | omical for AC loads | | ton |
| (a) 5 | (b) 50 | (c)2 | (d) 20 | В |

.

| Q71) is the temperature of saturation of air | | | | |
|--|----------------------|-----------------------|-------------------|---------|
| (a) Relative Humidity | • | (b) Absolute Hu | | C |
| (c) Dew Point | | (d) Latent heat | effect | |
| Q72) The solid angle subter | nded by an area c | of 2400 sq cm on th | e surface of a sp | |
| | (b) 1/3 | (c)2/3 | (d) 2/5 | C |
| (a) 0/ 2 | (5) 1/ 5 | (0)2/0 | (4) 2/ 5 | |
| Q73) The total quantity of as | f light emitted p | per second by a | light source is | known |
| (a) Luminous flux | | (b) Luminous Ir | ntensity | A |
| (c) Illumination | | (d) Luminance | J | |
| (-) | | \ / | | |
| Q74) The sum of reflection material is | n factor, absorption | on factor and tran | smission factor | for any |
| (a) Equal to zero | | (b) Less than ze | ro | C |
| (c) Equal to unity | | (d) Greater than | | |
| , , | | ` , | | |
| Q75) Which of the followin | g lamps are partic | cularly suitable in f | og? | В |
| (a) Mercury vapour lan | nps | (b) Sodium Vap | our Lamps | |
| (c) Compact Fluorescen | t Lamps | (d) Incandescer | it Lamps | |
| | | | | |
| Q76) Lux is the unit for the | measurement of | | | C |
| (a) Luminous flux | | (b) Luminous II | ntensity | |
| (c) Illumination | | (d) Luminance | | |
| 077) Ston notontial and To | uch potential are | accociated twith | | |
| Q77) Step potential and To- (a) High Voltage Transi | - | | Substation | В |
| (c) Rise in receiving end | | (d) Dip in Distr | | |
| (c) Rise in receiving en | voltage | (a) Dip in Disti | ibution voluge | |
| Q78) The Diesel Power Plan | nt are mainly used | d as | | |
| (a) Peak Load plant | • | Base Load Plant | | D |
| (c) Stand by plant | ` ' | Both peak and Star | nd by plants | |
| (-) | () | 1 | 7 1 | |
| Q79) The cetane number of | Diesel fuels are u | sually in the range | of | |
| (a) 10-200 | | 20-400 | | C |
| (c) 30-60 | (d) 1 | 10-20 | | |
| | | | | |
| Q80) One kWh of electrical | 0.0 | | | В |
| (a) 3600 J | (b) 860 kcal | (c) 3600 W | (d) 4186 J | |

Q81) A single phase transformer working at unity power factor has an efficiency of 90 % at both half load and at full load of 500 W. Determine the efficiency at 75 % of full load.

Efficiency of the transformer at full load = 0.9 Output at full load = 500 W Let the iron losses of the transformer be = x Wand the total copper losses at full load be = y W Then, the total losses at full load = x + y $0.9 = \frac{500}{500 + x + y}$ Hence 0.9x + 0.9y = 50Efficiency of the transformer at half of full load = 0.9 Total copper losses at half of full load = $\left(\frac{1}{2}\right)^2 \times y = \frac{y}{4}$ Output of the transformer = $\frac{1}{2} \times 500 = 250 \text{ W}$ $0.9 = \frac{250}{250 + x + \gamma/4}$ Thus 0.9x + 0.225y = 25Solving Eqs (i and ii) y = 37 W and x = 18.53 Wi.e. total copper losses at full load = 37 W Iron losses = 18.53 W Output of the transformer at 75 per cent of full load $= 0.75 \times 500 = 375 \text{ W}$ Total copper losses at 75 per cent of full load $=(0.75)^2 \times 37 = 20.8 \text{ W}$ Efficiency at 75 per cent of full load ...

Q82) Draw a line diagram/block diagram of system employed for distribution of electrical energy in domestic installation. Also draw a circuit diagram for the staircase wiring employed in multi-storied buildings.

