

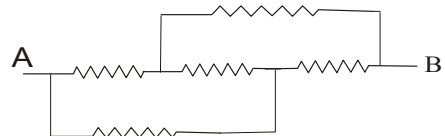
# AMU-2013-2014

## XIth Science/Diploma Engineering

- What is the capital of Spain?  
(a) Barcelona (b) Madrid  
(c) Lisbon (d) Gibraltor
- Ranji Trophy is associated with:  
(a) Tennis (b) Cricket  
(c) Hockey (d) Kabaddi
- Leander Paes is a famous Indian player of  
(a) Tennis (b) Golf  
(c) Volley Ball (d) Foot Ball
- NCERT is concerned with:  
(a) Film (b) Sports  
(c) Education (d) Law
- Tsunami had struck Andaman and Nicobar in:  
(a) 2004 (b) 2005  
(c) 2006 (d) 2007
- Kofi Annan is the  
(a) Present Secretary General of the UN  
(b) Former Secretary General of the UN  
(c) Former President of the World Bank  
(d) Present President of the World Bank
- PDS stands for  
(a) Poor Development Scheme  
(b) Poor Distribution Scheme  
(c) Public Distribution System  
(d) Private Distribution System
- Quartz is made of  
(a) Iron and Carbon  
(b) Silicon and Oxygen  
(c) Iron and Nitrogen  
(d) Silicon and Hydrogen
- Mummy is  
(a) A dead body  
(b) A name for a witch  
(c) An embalmed dead body  
(d) The American slang word for mother
- Who formulated first the laws of planetary motion?  
(a) Kepler (b) Newton  
(c) Galileo (d) Einstein
- Who did destroy the seat of the Naqshbandi order in Sirhind?  
(a) Sikhs (b) British  
(c) Hindus  
(d) Rival Muslim sects
- Khwaja Moinuddin Chisti passed away in  
(a) 1098 (b) 1176  
(c) 1209 (d) 1236
- The Anglo-Arabic College was established in  
(a) Calcutta in 1875  
(b) Aligarh in 1877  
(c) Hyderabad in 1920  
(d) Delhi in 1825
- Sultanat period in Muslim India history was from  
(a) 1268-1512 (b) 1309-1498  
(c) 1206-1526 (d) 1367-1483
- Qutb Minar in Delhi is located next to  
(a) Masjid Quwwat al-Islam  
(b) Jamey Masjid  
(c) Moti Masjid  
(d) Kali Masjid
- Who was the editor of *Hamdard*?  
(a) Hakim Abdul Hamid  
(b) Muhammad Ali Jauhar  
(c) Abul Kalam Azad  
(d) Hakim Muhammad Said
- Who among the following is not a compiler of Hadith?  
(a) Shah Waliullah (b) Imam Malik  
(c) ImamNasai  
(d) Imam Abu Dawud

18. Who did lead Prayers in Prophet Muhammad's (pbuh) last days?  
 (a) Abu Bakr (b) Umar  
 (c) Usman (d) Ali
19. After conquering Makkah Prophet Muhammad (pbuh) got all the Makkan unbelievers:  
 (a) Killed (b) Exiled  
 (c) Imprisoned (d) Pardoned
20. Abd al-Muttalib was Prophet Muhammad's (pbuh):  
 (a) Uncle (b) Cousin  
 (c) Father (d) Grandfather
21. An object is moving with uniform velocity. The area enclosed under the velocity-time graph between any two instants  $t = t_1$  and  $t = t_2$  gives us:  
 (a) The magnitude of the displacement  
 (b) Velocity of the object  
 (c) Acceleration of the object  
 (d) Force acting on the object
22. The natural tendency of an object to resist any change in its state of motion is called its:  
 (a) Weight (b) Momentum  
 (c) Energy (d) Inertia
23. A batsman hits a cricket ball which then rolls on a level ground. After covering a short distance, the ball comes to rest. The ball comes to a stop because:  
 (a) The batsman did not hit the ball hard enough  
 (b) There is a force on the ball opposing the motion  
 (c) The velocity is proportional to the force exerted on the ball  
 (d) There is no unbalanced force on the ball, so the ball would want to come to rest
24. A ball is thrown vertically upwards with a velocity of 49 m/s. What is the total time it takes to return to the surface of the earth?  
 (a) 5 second (b) 10 second  
 (c) 15 second (d) 20 second
25. An electric bulb of 1000 W is used for 5 hours per day. The 'units' of energy consumed in one day are  
 (a) 10 'units' (b) 5 'units'  
 (c) 4 'units' (d) 1 'unit'
26. A person clapped the hands near a cliff and heard the echo after 4 seconds. Assuming the speed of sound in air at the given temperature to be 346 m/s, calculate the distance of the cliff from the person:  
 (a) 1730 m. (b) 1384 m.  
 (c) 865 m. (d) 692 m.
27. Where should an object be placed in front of a convex lens to get a real image of the size of the object?  
 (a) at the principal focus of the lens  
 (b) at infinity  
 (c) at twice the focal length  
 (d) between the optical centre of the lens and its principal focus
28. The human eye can focus objects at different distances by adjusting the focal length of the eye lens. This is due to:  
 (a) Nearsightedness (b) Farsightedness  
 (c) Accommodation (d) Presbyopia
29. A  $16 \Omega$  resistance wire is doubled on it. Calculate the new resistance of the wire:  
 (a)  $01 \Omega$  (b)  $04 \Omega$   
 (c)  $08 \Omega$  (d)  $32 \Omega$
30. A nichrome wire has diameter 0.5 mm and resistivity of  $10^{-4} \Omega$ -m. What will be the length of the wire to make its resistance of  $70 \Omega$  ?  
 (a) 48.75 (b)  $187.5 \times 10^{-4}$  m  
 (c)  $137.5 \times 10^{-3}$  m (d) 122.7 m

31. A network of five identical resistors, each of value  $10\ \Omega$  is made as shown in the figure. Equivalent resistance between points A and B is:



- (a)  $100\ \Omega$                       (b)  $50\ \Omega$   
 (c)  $20\ \Omega$                         (d)  $10\ \Omega$
32. Commonly used electric generators work on the principle of:  
 (a) Nuclear fission  
 (b) Nuclear fusion  
 (c) Solar energy conversion  
 (d) Electromagnetic induction
33. The temperature at which the fusion of light nuclei may occur is of the order of  
 (a)  $10^7\text{deg.K}$                       (b)  $10^5\text{deg.K}$   
 (c)  $10^3\text{deg.K}$                         (d)  $10^{-3}\text{deg.K}$
34. Which energy source may yield relatively pollution free energy?  
 (a) Wood                                (b) Solar energy  
 (c) Coal                                  (d) Petrol
35. The ocean thermal energy is due to:  
 (a) Geothermal changes deep inside the ocean  
 (b) Nuclear fission inside the ocean  
 (c) Chemical reactions inside the ocean  
 (d) Heating of water of the surface of the ocean by the sun
36. Bio-gas does not contain  
 (a)  $\text{CH}_4$                                 (b)  $\text{CO}_2$   
 (c)  $\text{H}_2\text{S}$                                 (d)  $\text{N}_2$
37. Identify the substance that is oxidized in the reaction given below:  
 $\text{CuO(s)} + \text{H}_2\text{(g)} \rightarrow \text{Cu(s)} + \text{H}_2\text{O(l)}$   
 (a) CuO                                (b)  $\text{H}_2$   
 (c) Cu                                    (d)  $\text{H}_2\text{O}$
38. Tyndall effect in colloidal solution is due to  
 (a) Absorption of light by the particles  
 (b) Refraction of light  
 (c) Scattering of light by the particles  
 (d) The presence of electrically charged particles
39. Isobars do not differ in the number of  
 (a) Protons                              (b) Electrons  
 (c) Neutrons                            (d) Nucleons
40. Out of following, the aqueous solution of which compound has the lowest pH?  
 (a) NaOH                                (b)  $\text{NH}_4\text{Cl}$   
 (c)  $\text{Na}_2\text{CO}_3$                             (d) NaCl
41. Which element has twice as many electrons in its second shell as in its first shell?  
 (a) Ne                                    (b) B  
 (c) Si                                      (d) C
42. Which of following reaction is mainly performed by the alkene?  
 (a) Substitution                        (b) Addition  
 (c) Decomposition                      (d) Replacement
43. In which of the following process metal carbonates change into metal oxide?  
 (a) Calcination                        (b) Roasting  
 (c) Reduction                          (d) All of the above
44. Which of the following is isoelectronic of  $\text{Na}^+$ ?  
 (a)  $\text{Cl}^-$                                   (b)  $\text{O}^{2-}$   
 (c)  $\text{O}^{2-}$                                 (d)  $\text{Li}^+$
45. Amphoteric oxide is  
 (a)  $\text{Na}_2\text{O}$                                 (b) BaO  
 (c) ZnO                                  (d)  $\text{K}_2\text{O}$
46. Oxidation of ethanol with alkaline potassium permanganate produces  
 (a)  $\text{CH}_3\text{CHO}$                             (b)  $\text{CH}_3\text{COOH}$   
 (c)  $\text{CH}_3\text{COCH}_3$                         (d)  $\text{CH}_3\text{COONa}$
47. The following reaction shows that  
 $\text{Zn} + \text{CuSO}_4 \rightarrow \text{ZnSO}_4 + \text{Cu}$   
 (a) Zn is more reactive metal than Cu  
 (b) Zn and Cu both have same reactivity  
 (c) Cu is more reactive than Zn

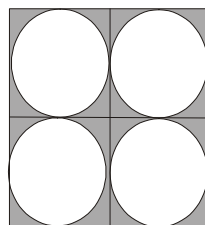
- (d) All the above
48. For rusting of iron, the necessary condition is:  
 (a) Dry  $N_2$  (b) Moist air  
 (c) Dry air (d) None of the above
49. An isotope of cobalt is used in the treatment of  
 (a) Goiter (b) Anaemia  
 (c) Carbon dating (d) Cancer
50. The organic compound present in tincture iodine is  
 (a) Potassium (b) Iodine  
 (c) Ethanol (d) Chloroform

51. If

$$x = \frac{1}{1+\sqrt{2}} + \frac{1}{\sqrt{2}+3} + \frac{1}{3\sqrt{2}+4\sqrt{2}} + \dots + \frac{1}{8+\sqrt{8}+\sqrt{8}}$$

then the value of  $x$  is

- (a) 0 (b) 1  
 (c) 2 (d) 3
52. If  $2^{2x+y} = 4^{x-y-3} = 1$ , then  $(x, y)$  is  
 (a) (-1, -2) (b) (-1, 2)  
 (c) (1, 2) (d) (1, -2)
53. The following observations have been arranged in ascending order. 29, 32, 48, 50,  $x$ ,  $x+2$ , 72, 78, 84, 95. If the median of the data is 63, then the value of  $x$  is  
 (a) 65 (b) 64  
 (c) 63 (d) 62
54. The area of the shaded region in the given figure, where ABCD is a square of side 14 cm is:



- (a)  $58 \text{ cm}^2$  (b)  $83 \text{ cm}^2$   
 (c)  $40 \text{ cm}^2$  (d)  $42 \text{ cm}^2$

55. Other zeros of  $3x^4 + 6x^3 - 2x^2 - 10x - 5$ , If

two of its zeros are  $\sqrt{\frac{5}{3}}$  and  $-\sqrt{\frac{5}{3}}$  are:

- (a) 1, 1 (b) -1, -1  
 (c) 0, 1 (d)  $\frac{5}{3}, -\frac{5}{3}$
56. Values of  $a$  and  $b$  for which the following pair of linear equations have an infinite number of solutions are:  
 $2x + 3y = 7$   
 $(a - b)x + (a + b)y = 3a + b - 2$   
 (a)  $a = -5, b = 1$  (b)  $a = 5, b = -1$   
 (c)  $a = 5, b = 1$  (d)  $a = -5, b = -1$

57. If the number of square centimetres on the surface of a sphere is equal to the number of cubic centimetres in its volume, then the diameter of the sphere is

- (a) 4 cm (b) 5 cm  
 (c) 6 cm (d) 3 cm
58. The floor of a rectangular hall has a perimeter 250 m. If the cost of painting the four walls at the rate of Rs. 10 per  $\text{m}^2$  is Rs. 15,000, then the height of the hall is:  
 (a) 5 m (b) 8 m  
 (c) 6 m (d) 7 m

59. The roots of  $x + \frac{1}{x} = 3, x \neq 0$  are

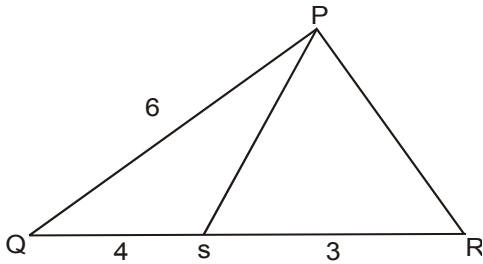
- (a)  $3, \frac{1}{3}$  (b)  $\frac{3}{2}, -\frac{3}{2}$   
 (c)  $\frac{\sqrt{5}}{2}, -\frac{\sqrt{5}}{2}$  (d)  $\frac{3+\sqrt{5}}{2}, \frac{3-\sqrt{5}}{2}$

60. Which term of the A.P.: 3, 15, 27, 9, ..... will be 132 more than its 54th term?

- (a) 45th term (b) 55th term  
 (c) 65th term (d) 35th term

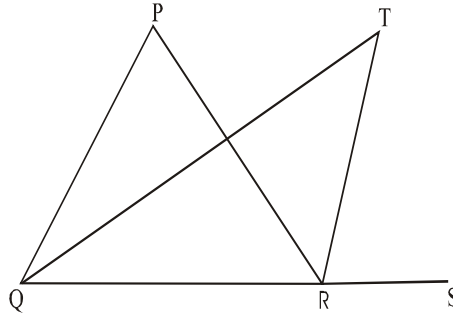
61. Two A.P.s have the same common difference. The difference between their 100th terms is 100, then the difference between their 1000th term is

- (a) 10                      (b) 100  
(c) 1000                    (d) None of these
62. If  $\sin 3A = \cos (A - 26^\circ)$ , where  $3A$  is an acute angle, then the value of  $A$  is:  
(a)  $A = 13^\circ$               (b)  $A = 64^\circ$   
(c)  $A = 29^\circ$               (d)  $A = 26^\circ$
63. ABC and BDE are two equilateral triangles such that D is the mid-point of BC. The ratio of areas of triangles ABC and BDE is:  
(a) 4 : 1                      (b) 1 : 4  
(c) 2 : 1                      (d) 1 : 2
64. In figure, PS is the bisector of  $\angle QPR$ , in the  $\triangle PQR$ . If  $PQ = 6$  cm,  $PR = x$  cm,  $QS = 4$  cm and  $RS = 3$  cm, then the value of  $x$  is



- (a) 4.5 cm                    (b) 9 cm  
(c) 8 cm                      (d) 5.4 cm
65. If (1, 2), (4, y), (x, 6) and (3, 5) are the vertices of a parallelogram taken in order, then  $x$  and  $y$  are:  
(a)  $x = 3, y = -1$         (b)  $x = 4, y = 1$   
(c)  $x = 5, y = 2$         (d)  $x = 6, y = 3$
66. The centre of a circle passing through the points (6, -6), (3, -7) and (3, 3) is  
(a) (2, 3)                    (b) (3, -2)  
(c) (-3, 2)                  (d) (-2, -3)
67. If the points (7, -2), (5, 1) and (3, k) are collinear, then the value of  $k$  is equal to  
(a) 1                            (b) 2  
(c) 3                            (d) 4

68. In the given figure, the side QR of  $\triangle PQR$  is produced to a point S. If the bisectors of  $\angle PQR$  and  $\angle PRS$  meet at point T, then  $\angle QTR$  is equal to



- (a)  $\angle QPR$                 (b)  $2 \angle QPR$   
(c)  $\frac{1}{2} \angle QPR$         (d)  $\frac{1}{3} \angle QPR$
69. The value of  $\tan 48^\circ \tan 23^\circ \tan 42^\circ \tan 67^\circ$  is  
(a) 0                            (b) 1  
(c) 2                            (d) 3
70.  $\sqrt{\frac{1 - \sin A}{1 + \sin A}}$  is:  
(a)  $\sin A - \cos A$         (b)  $\tan A + \cot A$   
(c)  $\sec A - \tan A$         (d)  $\operatorname{cosec} A + \cot A$
71. The zeroes of polynomial  $x^3 - 3x^2 + x + 1$  are  $a - b, a, a + b$ , then the values of  $a$  and  $b$  are:  
(a)  $a = -1, b = \pm\sqrt{2}$     (b)  $a = 1, b = \pm\sqrt{2}$   
(c)  $a = \pm\sqrt{2}, b = 1$     (d)  $a = \pm\sqrt{2}, b = -\sqrt{2}$
72. Sum of the areas of two squares is 468  $\text{m}^2$ . If the difference of their perimeters is 24 m, the sides of the two squares are  
(a) 18 m, 12 m              (b) 16 m, 12 m  
(c) 18 m, 16 m              (d) 14 m, 10 m

73. If the  $p$ th term of an A.P. is  $\frac{1}{p}$  and  $q$ th term is  $\frac{1}{q}$ , then sum of  $pq$  terms is
- (a)  $\frac{1}{3}(pq-1)$  (b)  $\frac{1}{3}(pq+1)$   
(c)  $\frac{1}{2}(pq-1)$  (d)  $\frac{1}{2}(pq+1)$
74. The area of a rhombus if its vertices are (3, 0), (4, 5), (-1, 4) and (-2, -1) taken in order is:  
(a) 24 sq. unit (b) 23 sq. unit  
(c) 25 sq. unit (d) 22sq.unit
75. The 'Median' for the following data is
- | Marks  | Number of Students |
|--------|--------------------|
| 0-10   | 5                  |
| 10-25  | 10                 |
| 25-40  | 15                 |
| 40-50  | 40                 |
| 50-60  | 15                 |
| 60-75  | 10                 |
| 75-100 | 5                  |
- (a) 40 (b) 45  
(c) 48 (d) 50
76. Two dice are rolled. Probability that both show six is:
- (a)  $\frac{1}{36}$  (b)  $\frac{1}{18}$   
(c)  $\frac{1}{6}$  (d)  $\frac{1}{2}$
77. A sphere and a cube have equal surface area. Ratio of their volumes is  
(a)  $\sqrt{6} : \sqrt{\pi}$  (b)  $\pi : 6$   
(c)  $6 : \pi$  (d)  $36 : \pi$
78. Number of sides of a polygon is equal to the number of its diagonals, then the polygon is a  
(a) Pentagon (b) Hexagon  
(c) Septagon (d) Octagon
79. If the Arithmetic Mean of 100 values is 50 and their Median is 48, then the approximate value of Mode is:  
(a) 44 (b) 46  
(c) 49 (d) 54
80. The angle between the hour hand and minute hand of a clock at 10:10 is  
(a)  $60^\circ$  (b)  $105^\circ$   
(c)  $115^\circ$  (d)  $120^\circ$
81. An organism which obtains nourishment from another larger living organism and harms it also is best defined as  
(a) Parasite (b) Autotroph  
(c) Saprophyte (d) Symbiont
82. Which of the following cannot multiply outside the living cells?  
(a) Bacteria (b) Protozoa  
(c) Viruses (d) Fungi
83. Those plants that grow in places with scanty water are called as  
(a) Mesophytes (b) Hydrophytes  
(c) Xerophytes (d) Epiphytes
84. Which one of the following is called "Suicide Bag" of a cell?  
(a) Plastids (b) Lysosome  
(c) Golgi Apparatus (d) None of the above
85. The organisms that feed on both plants and animals are  
(a) Carnivorous (b) Parasitic  
(c) Herbivorous (d) Omnivorous
86. Which is not an example of connective tissue?  
(a) Tendon (b) Cartilage  
(c) Blood (d) Neuron
87. Sea urchin belongs to  
(a) Echinodermata (b) Mollusca  
(c) Arthropoda (d) Cnidaria

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88. Archaeopteryx is considered missing link between  
 (a) Fishes and amphibians  
 (b) Birds and reptiles  
 (c) Birds and mammals  
 (d) Reptiles and mammals
89. Villi are present in  
 (a) Small Intestine (b) Lungs  
 (c) Large Intestine (d) Both a and c
90. The deficiency of iodine in the diet of a person causes disease known as 'goiter'. This is because of reduction in the production of a hormone namely  
 (a) Insulin (b) Thyroxin  
 (c) Glucagon (d) Testosterone
91. Alveoli are found, in which one of the following parts  
 (a) Brain (b) Lungs  
 (c) Heart (d) Stomach
92. Which one is wrong?  
 (a) Catabolism & anabolism → Metabolism  
 (b) Meiosis and fertilization → Sexual reproduction  
 (c) Abiotic and biotic components → Eco system  
 (d) Prebiotic and abiotic components → Ecosystem
93. Which enzyme is present in saliva?  
 (a) Pepsin (b) Trypsin  
 (c) Amylase (d) None of the above
94. Pinus is included in which group of Plantae?  
 (a) Pteridophyta (b) Bryophyta  
 (c) Gymnosperms (d) Angiosperms
95. The three 'Rs' of reducing pressure on environment do not include  
 (a) Refuse (b) Reduce  
 (c) Recycle (d) Reuse
96. Sea Horse (Hippocampus) comes in which group of Vertebrates  
 (a) Amphibia (b) Aves  
 (c) Reptiles (d) Pisces
97. In a Food Chain, which one of the following is the starting point?  
 (a) Primary consumers  
 (b) Secondary consumers  
 (c) Tertiary consumers  
 (d) Producers
98. Which is not an invertebrate fossil form?  
 (a) Trilobite (b) Ammonite  
 (c) Dinosaur (d) Brachiopod
99. Morphological evidence of evolution is not exhibited by  
 (a) Fossils  
 (b) Homologous organs  
 (c) Analogous organs  
 (d) DNA sequence homology
100. Which is not correct?  
 (a) Y bearing sperm + X- bearing egg → male foetus  
 (b) X bearing sperm + X- bearing egg → Female foetus  
 (c) X- bearing sperm + Y bearing egg → Female foetus  
 (d) XX- bearing sperm + X-bearing egg → abnormal female foetus

## Answers Sheet

- |         |         |         |          |         |         |         |         |
|---------|---------|---------|----------|---------|---------|---------|---------|
| 1. (b)  | 2. (b)  | 3. (a)  | 4. (c)   | 5. (a)  | 6. (b)  | 7. (c)  | 8. (b)  |
| 9. (c)  | 10. (a) | 11. (a) | 12. (d)  | 13. (d) | 14. (c) | 15. (a) | 16. (b) |
| 17. (a) | 18. (a) | 19. (d) | 20. (d)  | 21. (a) | 22. (d) | 23. (b) | 24. (b) |
| 25. (b) | 26. (d) | 27. (c) | 28. (c)  | 29. (b) | 30. (c) | 31. (d) | 32. (d) |
| 33. (a) | 34. (b) | 35. (d) | 36. (d)  | 37. (b) | 38. (c) | 39. (d) | 40. (b) |
| 41. (d) | 42. (b) | 43. (a) | 44. (c)  | 45. (c) | 46. (b) | 47. (a) | 48. (b) |
| 49. (d) | 50. (c) | 51. (c) | 52. (d)  | 53. (d) | 54. (d) | 55. (b) | 56. (c) |
| 57. (c) | 58. (c) | 59. (d) | 60. (c)  | 61. (c) | 62. (c) | 63. (a) | 64. (a) |
| 65. (d) | 66. (b) | 67. (d) | 68. (c)  | 69. (b) | 70. (c) | 71. (b) | 72. (a) |
| 73. (c) | 74. (a) | 75. (b) | 76. (a)  | 77. (a) | 78. (a) | 79. (a) | 80. (c) |
| 81. (a) | 82. (c) | 83. (c) | 84. (b)  | 85. (d) | 86. (d) | 87. (a) | 88. (b) |
| 89. (d) | 90. (b) | 91. (b) | 92. (d)  | 93. (c) | 94. (c) | 95. (a) | 96. (d) |
| 97. (d) | 98. (c) | 99. (d) | 100. (c) |         |         |         |         |

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