

END-SEMESTER EXAMINATION, 2023-24
B.TECH (SEMESTER : 03)
ARP 207 : LOGICAL SKILLS BUILDING AND SOFT SKILLS

Time: 2 Hrs.

Max. Marks: 100

- Note:** 1. All questions are compulsory.
 2. Assume missing data suitably, if any.

- CO1: Ascertain a competency level through Building Essential Language and Life Skills
 CO2: Build positive emotional competence in self and learn GOAL Setting and SMART Goals techniques
 CO3: Apply positive thinking, goal setting and success-focused attitudes, time Management, which would help them in their academic as well as professional career
 CO4: Acquire satisfactory competency in use of aptitude, logical and analytical reasoning
 CO5: Develop strategic thinking and diverse mathematical concepts through building number puzzles
 CO6: Demonstrate an ability to apply various quantitative aptitude tools for making business decisions

SECTION-A

APTITUDE AND REASONING

Attempt **ALL** questions of the following:

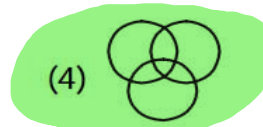
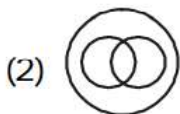
(50 × 1 = 50)

CO_s BTL

- | | |
|---|--------|
| 1. What should come in place of x if 563x5 is divisible by 9? | CO6 K1 |
| A.8 B. 9 C. 10 D. 5 | |
| 2. What should come in place of x if 4857x is divisible by 88? | CO6 K1 |
| A.9 B. 8 C. 4 D. 6 | |
| 3. The unit digit of 123 x 456 x 789 | CO6 K1 |
| A.2 B. 4 C. 8 D. 3 | |
| 4. What is the unit digit of (127) ²²³ | CO6 K1 |
| A.5 B. 7 C. 3 D. 6 | |
| 5. Convert into p/q form 2.3535353535..... | CO6 K1 |
| A.233/99 B. 233/90 C. 230/90 D. 235/90 | |
| 6. Find the sum of 85 ² + 52 ² | CO6 K1 |
| A.9990 B. 9930 C. 9929 D. 9950 | |
| 7. Find the cube of 32 | CO6 K1 |
| A.32768 B. 35350 C. 30225 D. 26759 | |
| 8. Find the square of 113 | CO6 K1 |
| A.12669 B. 12569 C. 12769 D. 13070 | |
| 9. Simplify the following sum 1012 ² /16 | CO6 K1 |
| A.64009 B. 60004 C. 64024 D. 55019 | |
| 10. Find the square of 62 | CO6 K1 |
| A.3844 B. 4024 C. 3744 D. 4044 | |

11. If A's salary is 20 % more than B, then by how much Percent B's salary is less than A. CO6 K2
A.20% B. 16.66% C.25% D. 33.33%
12. The number was being multiplied by $\frac{5}{6}$. By mistake it is divided by $\frac{5}{6}$. Find percentage error in result. CO6 K2
A.44% B. 64% C. 40% D. 60%
13. Price of petrol first increased by 20% and then it is decreased by 10% . Find the net change in the price. CO6 K2
A.8% Decrease B. 8% Increase C. 2% Decrease D. 10% Increase
14. A student scored 140 Marks and still failed by 35 marks. If the passing criteria of that exam is 35%. Then find the maximum marks of that exam. CO6 K2
A.500 B. 600 C. 700 D. 1000
15. The population of a town is 50,000. It increases by 10% in the first year and 12% in the second year. What will be the population after 2 years. CO6 K2
A.55000 B. 61600 C. 72700 D. 84600
16. Find the sub-triplicate ratio of 64:125? CO6 K2
A. 8:25 B. 4:5 C. 5:4 D. 4:25
17. If $p:q = 9:7$ and $p - q = 40$, then find value of "p"? CO6 K2
A.90 B. 140 C. 180 D.320
18. If $p:q = 1:2$ $r:q = 2:3$ then find $q:r:p$? CO6 K2
A.1:2:3 B.3:1:2 C. 6:4:3 D. 4:3:6
19. If Rs.782 be divided into three parts, proportional to $(\frac{1}{2} : \frac{2}{3} : \frac{3}{4})$, then the first part is: CO6 K2
A.Rs 182 B. Rs 190 C. Rs 196 D. Rs 204
20. The ratio of income of A and B is 5:6 and their expenditure is 3:4. If their savings are 1800 and 1600 then find income of A. CO6 K2
A.5000 B. 7200 C. 6000 D. 5400
21. When a plot is sold for Rs. 18,700, the owner loses 15%. At what price must that plot be sold in order to gain 15%? CO6 K2
A.Rs 21000 B. Rs22500 C. Rs25300 D. Rs 25800
22. If CP of 30 articles is equal to SP of 45 articles. Find the profit or loss percent. CO6 K2
A.33.33% loss B. 33.33% profit C. 20% loss D. 20% profit
23. A shopkeeper purchase some number of article for Rs.8400. He sold $\frac{3}{5}^{\text{th}}$ of them at 15 % profit each. At what percent profit should he sell the remaining to gain overall 20 % profit. CO6 K2
A.26% B. 27% C. 27.5% D. None
24. By selling 66m cloths a man earn a profit of equal to selling price of 6m cloths. Find his profit percent CO6 K2
A.20% B. 25% C. 10% D. 33.33%
25. A shopkeeper buy some number of article at the rate of 12 articles for Rs.15 and sold all of them at the rate of 10 articles for Rs.14. Find his profit or loss percent. CO6 K2
A.20% loss B. 33.33% profit C. 12% profit D. 12.5% loss
26. If **COURSE** is coded as **FRXUVH**, how is **RACE** coded as? CO4 K2
A. ABHF B. UDFH C. DUHF D. WQYF

27. If **ENGLAND** is written as **1234526** and **FRANCE** is written as **785291**, how is **GREECE** coded? CO4 K2
 A. 117186 B. 381191 C. 131871 D. 112235
28. In a certain code, if **LOGIC** is coded as **1512201824**, how is **PEARL** coded as? CO4 K2
 A. 112226915 B. 113331596 C. 112226710 D. 113336734
29. If white is called blue, blue is called red, red is called yellow, yellow is called green, green is called black, black is called violet and violet is called orange, what would be the color of human blood? CO4 K2
 A. Blue B. Yellow C. Black D. Violet
30. If **Z = 52** and **ACT = 48**, then **BAT** will be equal to: CO4 K2
 A. 39 B. 41 C. 44 D. 46
31. 1.12.91 is the first Sunday. Which is the fourth Tuesday of December 91? CO4 K2
 A. 31.12.91 B. 24.12.91 C. 17.12.91 D. 26.12.91
32. The calendar for 1992 is the same as for CO4 K1
 A. 2020 B. 1997 C. 2016 D. 1994
33. If day before Yesterday it was Monday, What day will fall on day after tomorrow ? CO4 K1
 A. Sunday B. Tuesday C. Saturday D. Friday
34. Find the odd one out of the series 2,3,5,7,11,13,15,17,19,23 CO4 K1
 A. 5 B. 15 C. 23 D. 11
35. Find the odd one out of the series 5,10,15,40,80,160,320 CO4 K1
 A. 160 B. 320 C. 15 D. 40
36. Which of the following words will come in the last if all of them are arranged alphabetically as in a dictionary? CO4 K1
 A. Apology B. Antigen C. Antique D. Antipathy
37. If the letters of the word **ARTICULATES** can be used as many times as one wants to use, then which one of the following four words cannot be formed? CO4 K1
 A. COURTS B. LATER C. ELECTRIC D. ARTICLE
38. Find the next term. CO4 K1
 Q, L, H, ?
 A. C B. B C. E D. A
39. First two terms in the expression have some relationship. Based on the same logic find the unknown term. CO4 K1
 N: 12: : S: ?
 A. 7 B. 6 C. 8 D. 5
40. Which of the following words will come third in the English dictionary? CO4 K1
 A. Xenia B. Xenon C. Xerus D. Xeric
41. Choose the correct figure that represents the given relation : Blue eyed, Males, Engineer CO4 K2



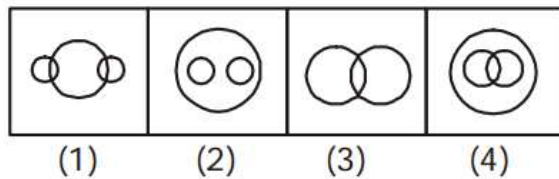
A. 1

B. 2

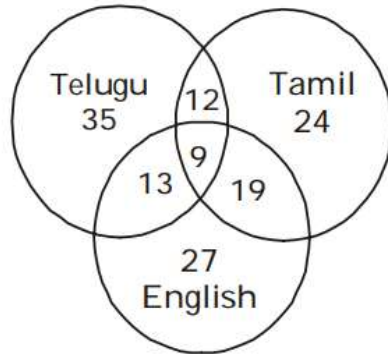
C. 3

D. 4

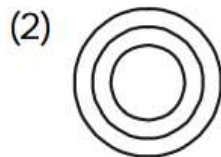
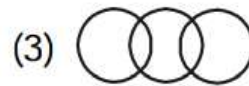
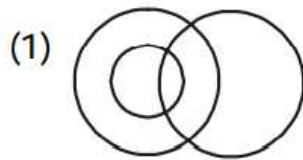
42. Which of the following diagrams represents the relationship of Business, Profit, Loss ? CO4 K2



- A.1 B. 2 C. 3 D. 4
43. Find out the number of all those people who can speak Tamil and Telugu? CO4 K2

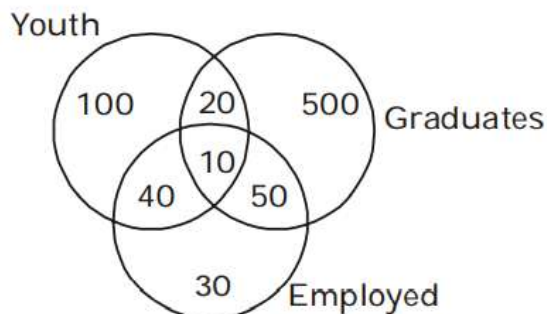


- A.3 B. 59 C. 21 D. 112
44. Which one of the following diagrams best depicts the relationship among people, men and father? CO4 K2



(4) None of these

- A.1 B. 2 C. 3 D. 4
45. If the number indicates the number of persons, then how many youth graduates are there? CO4 K2



- A.20 B. 30 C. 40 D. 50

46. **Statements:** All the tomatoes are onions. All the onions are bananas. CO4 K3
Conclusions: 1. All the bananas are onions. 2. All the tomatoes are bananas.
 A. Only (1) conclusion follows **B. Only (2) conclusion follows**
 C. Neither (1) nor (2) follows D. Both (1) and (2) follows
47. **Statements:** Some Keys are Pens. All the Pens are mobiles. CO4 K3
Conclusions: 1. All the mobiles are Pens. 2. Some keys are mobiles.
 A. Only (1) conclusion follows **B. Only (2) conclusion follows**
 C. Neither (1) nor (2) follows D. Both (1) and (2) follows
48. **Statements:** Some copies are pages. All the scales are pages. CO4 K3
Conclusions: 1. Some pages are scales. 2. Some pages are copies.
 A. Only (1) conclusion follows B. Only (2) conclusion follows
 C. Neither (1) nor (2) follows D. Both (1) and (2) follows
49. **Statements:** All the cars are Trucks. No Truck is Road. CO4 K3
Conclusions: 1. Some cars are Road. 2. No Road is Truck.
 A. Only (1) conclusion follows B. Only (2) conclusion follows
 C. Neither (1) nor (2) follows D. Both (1) and (2) follows
50. **Statements:** Some Trees are Walls. Some Walls are waters. CO4 K3
Conclusions: 1. Some Trees are waters. 2. Some waters are Tress.
 A. Only (1) conclusion follows B. Only (2) conclusion follows
 C. Neither (1) nor (2) follows D. Both (1) and (2) follows

SECTION-B

VERBAL ABILITY

Attempt ALL questions of the following:

(50 × 1 = 50)

Directions for Questions 51 – 55: Read the passage and answer the questions that follow CO₅ BTL

RC1 The Indian middle class consist of so many strata that it defies categorisation under a CO4 K4

single term class, which would imply a considerable degree of homogeneity. Yet two paradoxical features characterise its conduct fairly uniformly; extensive practice and intensive abhorrence of corruption. In the several recent surveys of popular perceptions of corruptions, politicians of course invariably and understandably top the list, closely followed by bureaucrats, policemen, lawyers, businessmen and others. The quintessential middle class. If teachers do not figure high on this priority list, it is not for lack of trying, but for lack of opportunities. Over the years, the sense of shock over acts of corruption in the middle class has witnessed a steady decline, as its ambitions for a better material life have soared but the resources for meeting such ambitions have not kept pace.

What is fascinating, however, is the intense yearning of this class for a clean corruptionless politics and society, a yearning that has again and again surfaced with any figure public or obscure, focus on his mission of eradicating corruption. Even the repeated failure of this promise on virtually every man's part has not subjected it to the law of diminishing returns.

- 51 The intense Middle Class intensely yearns for CO4 K4
 A. better material resources B. extensive practice of corruption
 C. clean honest society D. law of increasing returns
- 52 Teachers are not high on the list of corruption because they do not have CO4 K4
 A. courage B. opportunities C. support D. ambition
- 53 The Indian Middle class is CO4 K4
 A. defiant B. mysterious C. homogeneous D. stratified
- 54 Who figure on top of the list of corruption? CO4 K4
 A. Businessmen B. lawyers C. politicians D. policemen
- 55 This yearning, over the years, has CO4 K4
 A. Persisted B. soared C. declined D. disappeared

Directions for Questions 56 – 60: Read the passage and answer the questions that follow CO_S BTL

RC2 Soft bodied animals like caterpillars often fall a prey to voracious hunters like birds or reptiles. Despite having no means to 'actively' defend themselves, with weapons like claws or jaws, they have nevertheless, evolved other equally effective deterrents. A particular species of the caterpillar lives at an altitude over 2.500 metres in the Himalayas. It uses prominent colour to inform would be predators of its in edibility. In the event that an inexperienced or adventurous bird did eat the caterpillar, it would probably vomit it soon after, and subsequently desist from attacking similar species in future. Though this would do the unfortunate victim no good, the species benefits. A rare example of the martyr among animals.

- 56 The expression "others equally effective deterrents" mean CO4 K4
 A. preventive weapons which have equal effect of others
 B. mechanism which scares everyone equally well
 C. preventive equipment which it is as effective as something that has been already mentioned in the passage
 D. deterrents that are as powerful as those the caterpillars have
- 57 Experienced birds do not attack the Himalayan caterpillars because they are CO4 K4
 A. repulsive B. very aggressive C. inedible D. diseased
- 58 The Himalayan caterpillar uses prominent colours to CO4 K4
 A. warn the predator B. attack the predator C. reveal itself D. defend itself
- 59 Caterpillars cannot defend themselves because CO4 K4
 A. are passive animals B. are lazy
 C. cannot acquire weapons D. have no claws or jaws
- 60 In the context of this passage, a martyr is one who dies CO4 K4
 A. without putting up resistance B. without any gain to oneself
 C. while defending ones homeland D. to save others

Directions for Questions 61 – 65: Read the passage and answer the questions that follow CO_S BTL

RC3 The strength of the electronics industry in Japan is the Japanese ability to organise production and marketing rather than their achievements in original research. The British are generally recognised as a far more inventive collection of individuals, but never seem able to exploit what they invent. There are many examples, from the TSR Z hovercraft, high speed train and Sinclair scooter to the Triumph, BSA and Norton Motorcycle which all prove this sad rule. The Japanese were able to exploits their strengths in marketing and development many years ago, and their success was at first

either not understood in the West or was dismissed as something which could have been produced only at their low price. They were sold because they were cheap copies of other people's ideas churned out of a workhouse which was dedicated to hard grind above all else.

- 61 It is evident from the passage that the strength of a country's industry depends upon CO4 K4
 A. original research B. international cooperation
 C. dedicated workforce D. electronic development
- 62 The sad rule mentioned in this passage refers to CO4 K4
 A. the inability of the Japanese to be inventive like the British
 B. the inability of the British to be industrious like the Japanese
 C. the lack of variety in Japanese inventions
 D. the poorer marketing ability of British
- 63 The TSR Z hovercraft, high speed train, Sinclair scooter etc. are the symbols of CO4 K4
 A. Japanese success B. British failure C. British success D. Japanese failure
- 64 According to the passage, prosperity in industry depends upon CO4 K4
 A. Productivity B. inventiveness C. marketing ability D. official patronage
- 65 The main theme of this passage is CO4 K4
 A. electronic industry in Japan
 B. industrial comparison between Japan and Britain
 C. the role of marketing efficiency in industrial prosperity
 D. the importance of original research in industry

Directions for Questions 66 – 70: Read the passage and answer the questions that follow CO₅ BTL

RC4 The greatest thing this age can be proud of is the birth of man in the consciousness of men. In his drunken orgies of power and national pride man may flout and jeer at it. when organised national selfishness, racial antipathy and commercial self-seeking begin to display their ugly deformities in all their nakedness, then comes the time for man to know that his salvation is not in political organisations and extended trade relations, not in any mechanical re-arrangement of social system but in a deeper transformation of life, in the liberation of consciousness in love, in the realisation of God in man.

- 66 In this passage, the phrase "God in man" implies CO4 K4
 A. God having assumed the shape of man
 B. neither fully godly nor fully human
 C. man being transformed into God
 D. the divine qualities in man
- 67 The author uses the expression 'ugly deformities' to show his indignation at CO4 K4
 A. political organisations
 B. the liberation of human consciousness
 C. selfishness and materialism of the people
 D. the drunken orgies of power
- 68 According to the author, "salvation" of human beings lies in the CO4 K4
 A. extended trade relations
 B. spiritual transformation of life
 C. orgy of national pride
 D. wholehearted participated in political organisations

- 69 In the phrase "the birth of Man in the consciousness of men", Man stands for CO4 K4
 A. power and arrogance B. egocentricity
 C. noble human qualities D. an idealistic notion of the human self
- 70 People jeer at the 'birth of Man' in the human consciousness when they CO4 K4
 A. begin to think of themselves as God B. become power hungry
 C. restructure the social system D. become mentally deranged

Directions for Questions 71 - 80: Fill in the blank space(s) with the right combination of COs BTL word(s)

- 71 He tried to pass the ____ money at the bank as if it were _____. CO2 K2
 (A) stolen . . . illegitimate (B) bogus . . . genuine
 (C) dishonest . . . counterfeit (D) ill-gotten . . . legitimate
- 72 She is ____ in needlework but ____ in arranging the wares. CO2 K2
 (A) abominable . . . humane (B) outlandish . . . urban
 (C) dextrous . . . clumsy (D) talented . . . untidy
- 73 His ____ devotion consistently earned him _____. CO2 K2
 (A) dubitable . . . eulogy (B) undulating . . . evaluation
 (C) swelling . . . denunciation (D) unwavering . . . tributes
- 74 Jingoists can ____ all personal material concerns until such time as their land is CO2 K2
 liberated and restored to peaceand _____.
 (A) dispense . . . tranquillity (B) renounce . . . plentitude
 (C) desist . . . prosperity (D) relinquish . . . wherewithals
- 75 There is scope for a huge, new criminal industry dedicated to stealing, forging and CO2 K2
 ____ identity cards if authoritiesmake identity recognition ____ in every sphere.
 (A) framing . . . domineering (B) spearheading . . . dominating
 (C) manoeuvring . . . feasible (D) manipulating . . . mandatory
- 76 Luxury works a kind of magic on us, but only if we allow it to be ____ and rare rather CO2 K2
 than ____ and readily available.
 (A) meretricious . . . chintzy (B) unique . . . priceless
 (C) exotic . . . inexpensive (D) special . . . quotidian
- 77 Unless new reserves are found soon, the world'ssupply of coal is being ____ in such CO2 K2
 a way thatwith demand continuing to grow at present ratesreserves will be ____ by
 the year 2050.
 (A) consumed, completed (B) depleted, exhausted
 (C) reduced, argument (D) brunt, destroyed
- 78 If you are a ____ you tend to respond to stressfulsituations, in a calm secure, steady CO2 K2
 and ____ way.
 (A) resilient, rational (B) obdurate, manageable
 (C) propitious, stable (D) delectable, flexible
- 79 My inward petition was instantly _____.First, a delightful cold wave descended CO2 K2
 over my
 back and under my feet, _____ all discomfort.
 (A) acknowledged, banishing (B) repudiated, infuriating
 (C) acceded, exacerbating (D) decimated, assuaging

- 80 The first round of the contest had the students_____ themselves and _____ about their hobbies. CO2 K2
- (A) introducing, talking (B) sensitizing, sketching
- (C) showcasing, planning (D) acclimatizing, mentioning

CO_s BTL

Directions for Questions 81 - 90: Choose the GRAMMATICALLY INCORRECT PORTION of the sentence

- 81 If I would have been there (A)/ I certainly would have (B)/ taken care of the problem (C). No error (D) CO1 K2
- 82 The reason her (A)/ and her friend decided to take the bus instead of the train was that there (B)/ was an announcement about cancellation of several trains (C). No error (D) CO1 K2
- 83 No sooner (A)/ had he began to speak when (B)/ the opposition members started shouting slogans (C). No error (D) CO1 K2
- 84 Each of the (A)/ hotel's 150 rooms were equipped (B)/ with central air-conditioning and colour television (C). No error (D) CO1 K2
- 85 Every (A)/ man, woman and child are now (B)/ aware of the terrible consequences of the habit of smoking (C). No error (D) CO1 K2
- 86 More leisure (A)/, as well as abundance (B)/ of consumer goods are attainable through automation (C). No error (D) CO1 K2
- 87 Since it (A)/ was an unusually (B)/ warm day, the dog laid under the tree all afternoon (C). No error (D) CO1 K2
- 88 That is (A)/ one of the books that is (B)/ listed in the catalogue (C). No error (D) CO1 K2
- 89 When her plane arrives (A) at the airport in Amritsar, I shall already have (B)/ left for New Delhi (C). No error (D) CO1 K2
- 90 Neither Rakesh nor (A)/ Shakti, presented their (B)/, papers before the deadline for doing so (C). No error (D) CO1 K2

Directions for Questions 91 - 95: The sentences given in each of the following questions, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a letter. From among the four choices given below each question, choose the most logical order of sentences that constructs a coherent paragraph. CO_s BTL

- 91 A. He somehow knew he would find what he was looking for. So with missionary zeal, he started to climb. CO3 K3
- B. So instead, for perhaps the first in this life he shed the shackles of reason and placed his trust in his intuition.
- C. At first he thought about hiring a Sherpa guide to aid him in his climb through the mountains, but, for some strange reason, his instincts told him, this was one journey he would have to make alone.
- D. The next morning, as the first rays of the Indian sun danced along the colourful horizon, Julian set out his trek to the lost land of Savanna.
- (A) ABCD (B) ACBD (C) CDAB (D) DCBA

- 92 A. Even when it is self-willed, migration causes dislocation and alienation, creating the need for meaningful identities at the individual level. CO3 K3
 B. The root cause is modernisation that has spurred migration in large numbers.
 C. Simultaneously, education and development within non-western societies stimulates the revitalisation of indigenous identities and culture.
 D. Huntington's analysis explains why we are witnessing this surging antagonism among Indian and Pakistani youth and expatriates.
 (A) DBCA (B) BCDA (C) DBAC (D) BADC
- 93 A. Not too far from the bright lights of Mumbai, a silent scourge is killing thousands of young children. CO3 K3
 B. Their ill-fed bodies vulnerable to infection, most succumbed to ailments as minor as diarrhoea.
 C. Stalked by chronic hunger and disease, nearly 30,000 children below the age of six have died in the last year alone in the state's rural belt.
 D. It may be considered the country's dollar magnet and envied for its robust industrial base but this image of Maharashtra cloaks a macabre reality.
 (A) CBDA (B) DACB (C) BDCA (D) CDBA
- 94 A. During the 24-hour darkness of the austral autumn and winter, the South Pole Telescope operates nonstop under impeccable conditions for astronomy. CO3 K3
 B. The atmosphere is thin (the pole is more than 9,300 feet above sea level, 9,000 of which are ice), stable (due to the absence of the heating and cooling effects of a rising and setting Sun) and the pole has some of the calmest winds on Earth, blowing almost always from the same direction.
 C. The South Pole has the harshest environment on Earth, but also the most benign, says William Holzapfel, a University of California at Berkeley astrophysicist, the on-site lead researcher at the South Pole Telescope.
 D. From an astronomer's perspective, not until the Sun goes down and stays down—March through September—does the South Pole get —benign.
 (A) ABCD (B) CDBA (C) CDAB (D) ACBD
- 95 A. The oldest fossil grasses are just 70 million years old, although grass may have evolved a bit earlier than that. CO3 K3
 B. There have been land plants for 465 million years, yet there were no flowers for over two-thirds of that time.
 C. The equally-familiar grasses appeared even more recently.
 D. Flowering plants only appeared in the middle of the dinosaur era.
 (A) DCBA (B) BCAD (C) CADB (D) BDCA

Directions for Questions 96 - 100: Choose the most appropriate answer from the options given below CO_s BTL

- 96 PhishCo runs a number of farms in the arid province of Nufa, depending largely on irrigation. Now, as part of a plan to efficiently increase the farms' total production, it plans to drill down to an aquifer containing warm, slightly salty water that will be used to raise fish in ponds. The water from the ponds will later be used to supplement piped-in irrigation water for PhishCo's vegetable fields, and the ponds and accompanying vegetation should help reduce the heat in the area of the farms. CO4 K5
 Which of the following would, if true, most strongly suggest that the plan, if implemented, would increase the overall efficiency of PhishCo's farms?

- A. Most of the vegetation to be placed around the ponds is native to Nufa.
- B. Fish raised on PhishCo's farms are likely to be saleable in the nearest urban areas.
- C. Organic waste from fish in the pond water will help to fertilize fields where it is used for irrigation.
- D. The government of Nufa will help to arrange loan financing to partially cover the costs of drilling.
- 97 Hollywood restaurant is replacing some of its standard tables with tall tables and stools. CO4 K5
The restaurant already fills every available seat during its operating hours, and the change in seating arrangements will not result in an increase in the restaurant's seating capacity. Nonetheless, the restaurant's management expects revenue to increase as a result of the seating change without any concurrent change in menu, prices, or operating hours.
Which of the following, if true, provides the best reason for the expectation?
- A. One of the taller tables takes up less floor space than one of the standard tables.
- B. Diners seated on stools typically do not linger over dinner as long as diners seated at standard tables.
- C. Since the restaurant will replace only some of its standard tables, it can continue to accommodate customers who do not care for the taller tables.
- D. Few diners are likely to avoid the restaurant because of the new seating arrangement.
- 98 Many agriculturally intensive areas of the world are beginning to encounter water scarcity problems. As a result, many farmers in these areas are likely to reduce their output as the water supply they need in order to maintain production shrinks. However, one group of farmers in such a region plans to increase their production by implementing techniques for water conservation. CO4 K5
Which of the following, if true, would most strongly support the prediction that the group's plan will succeed?
- A. Farmers who can gain a larger share of the food market in their regions will be better positioned to control more water resources.
- B. Most agricultural practices in areas with water shortages are water-intensive.
- C. Other regions of the world not facing water shortages are likely to make up for the reduction in agricultural output.
- D. More than half the water used for agriculture in the farmers' region is lost to evaporation or leakage from irrigation channels.
- 99 To reduce productivity losses from employees calling in sick, Corporation X CO4 K5
implemented a new policy requiring employees to come into work unless they were so sick that they had to go to a doctor. But a year after the policy was implemented, a study found that Corporation X's overall productivity losses due to reported employee illnesses had increased.
Which of the following, if true, would best explain why the policy produced the reverse of its intended effect?
- A. After the policy was implemented, employees more frequently went to the doctor when they felt sick.
- B. Before the policy was implemented, employees who were not sick at all often called in sick.

- C. Employees coming into work when sick often infect many of their coworkers.
- D. Unusually few employees became genuinely sick during the year after the policy was implemented.

100 City council member: Demand for electricity has been increasing by 1.5 percent a year, CO4 K5 and there simply is no more space to build additional power plants to meet future demand increases. We must therefore begin to curtail usage, which is why I propose passing ordinances requiring energy-conservation measures in all city departments. The city council member's proposal assumes which of the following?

- A. Existing power plants do not have the capacity to handle all of the projected increase in demand for electricity.
- B. No city departments have implemented energy-conservation measures voluntarily.
- C. Passing ordinances designed to curtail electricity usage will not have negative economic consequences for the city.
- D. Residential consumers are not responsible for the recent increases in demand for electricity.

* * * * *

Paper ID: 16138

Roll No.....

END-SEMESTER EXAMINATION, 2023-24
B. Tech. (SEMESTER : 04)
BTY 223 : INTRODUCTION TO BIOLOGY FOR ENGINEERS

Time: 2 Hrs.

Max. Marks: 100

- Note:** 1. All questions are compulsory.
 2. Assume missing data suitably, if any.

- CO1: Understand The Fundamentals Of Living Things, Their Classification, Cell Structure And Biochemical Constituents
 CO2: Apply The Concept Of Plant, Animal And Microbial Systems And Growth In Real Life Situations.
 CO3: Comprehend Genetics And The Immune System.
 CO4: Know The Cause, Symptoms, Diagnosis And Treatment Of Common Diseases.
 CO5: Give A Basic Knowledge Of The Applications Of Biological Systems In Relevant Industries.
 CO6: To Have An Overall Knowledge And Understanding Of The Impact Of Biology In Human Life

COs Marks BTL

SECTION-A

All Questions are Compulsory:
Marks)

(5×5=25

- | | | | |
|---|-----|---|----|
| 1. What is the difference between unicellular and multicellular organisms. Show with example. | CO1 | 5 | K1 |
| 2. List the major differences between DNA and RNA. | CO2 | 5 | K1 |
| 3. Explain the differences between innate immunity and adaptive immunity. | CO3 | 5 | K2 |
| 4. What is cancer and how does it develop? | CO4 | 5 | K2 |
| 5. What do you understand by bioremediation? What are different types of bioremediations? | CO5 | 5 | K3 |

SECTION-B

All Questions are Compulsory:
Marks)

(3×8=24

- | | | | |
|---|-----|---|----|
| 6. (a) Identify the role of Interferons against viral infections. | CO3 | 8 | K3 |
| --- OR --- | | | |
| (b) Identify the theory of Lamarckism by making use of suitable examples. | | | |
| 7. (a) What is the full form of HIV, and examine how does it cause AIDS? Also analyse the modes of transmission of HIV. | CO4 | 8 | K4 |
| --- OR --- | | | |
| (b) Distinguish between Type I and Type II Diabetes. Also inspect the treatment options for each type. | | | |
| 8. (a) Discover the various types of biofertilizers used in agriculture. | CO5 | 8 | K4 |
| --- OR --- | | | |