DU MSc OR MA MSc Applied Operatonal Research

Topic:- DU_J19_MSC_OR_T1

1) Read the paragraph below and answer the questions that follow:
A jolly musicologist by the entirely unobjectionable name of Henry Pleasants has written a book called "The Agony of Modern Music". That word 'agony' is right. Much of what passes for music of these times is raucous noise and the excuse for persisting with it is that every common youngster understands and likes it. That pleasant fellow concedes that 'serious' music is virtually dead. This may be dismissed as yet another pleasantry which the undirected young indulge in. Paul Hindesmith, possibly one of the last of the classical giants, once said that some composers tended to develop an over-sublimated technique which produces images of emotions that are far removed from any emotional experience, a relatively normal human being ever has. That is just the point. High art can never be totally democratised. There is a barrier between the egghead and the hoi polloi and it would be lazy idealism to ignore this. When Bach played and Beethoven roared, who was then the gentleman? The pity of it is that while talking music to the masses, all known rules are broken and improvisation becomes king. That, roughly speaking, is how jazz was born; by dropping discipline, inspiration, deep personal emotions and every element of creative art and adopting improvisation as its main rationale. Why they even tried to smuggle bits of jazz into serious music so that the composers could somehow survive. Now they are going a step further: learn it by ear, don't write down the stuff, make it up as you go along and hope , by these shoddy techniques, that everyone present will applaud and, thus provide the composer and the performers with their daily bread.

The author uses the word 'improvisation' to suggest [Question ID = 12830]

1. rendering the original more popular [Option ID = 21319]
2. simplifying the original [Option ID = 21320]
3. making the original more sublime [Option ID = 21317]
4. tampering with the original [Option ID = 21318]

Correct Answer :-
- making the original more sublime [Option ID = 21317]

2) Read the paragraph below and answer the questions that follow:
A jolly musicologist by the entirely unobjectionable name of Henry Pleasants has written a book called "The Agony of Modern Music". That word 'agony' is right. Much of what passes for music of these times is raucous noise and the excuse for persisting with it is that every common youngster understands and likes it. That pleasant fellow concedes that 'serious' music is virtually dead. This may be dismissed as yet another pleasantry which the undirected young indulge in. Paul Hindesmith, possibly one of the last of the classical giants, once said that some composers tended to develop an over-sublimated technique which produces images of emotions that are far removed from any emotional experience, a relatively normal human being ever has. That is just the point. High art can never be totally democratised. There is a barrier between the egghead and the hoi polloi and it would be lazy idealism to ignore this. When Bach played and Beethoven roared, who was then the gentleman? The pity of it is that while talking music to the masses, all known rules are broken and improvisation becomes king. That, roughly speaking, is how jazz was born; by dropping discipline, inspiration, deep personal emotions and every element of creative art and adopting improvisation as its main rationale. Why they even tried to smuggle bits of jazz into serious music so that the composers could somehow survive. Now they are going a step further: learn it by ear, don't write down the stuff, make it up as you go along and hope , by these shoddy techniques, that everyone present will applaud and, thus provide the composer and the performers with their daily bread.

According to the author, high art cannot be democratised because [Question ID = 12831]

1. people differ in their emotional experience [Option ID = 21322]
2. high art oversublimated [Option ID = 21321]
3. democratising necessarily involves improvisation [Option ID = 21324]
4. masses cannot be expected to appreciate what only the few intelligent can [Option ID = 21323]

Correct Answer :-
- high art oversublimated [Option ID = 21321]

3)

Read the paragraph below and answer the questions that follow:
A jolly musicologist by the entirely unobjectionable name of Henry Pleasants has written a book called "The Agony of Modern Music". That word 'agony' is right. Much of what passes for music of these times is raucous noise and the excuse for persisting with it is that every common youngster understands and likes it. That pleasant fellow concedes that 'serious' music is virtually dead. This may be dismissed as yet another pleasantry which the undirected young indulge in. Paul Hindesmith, possibly one of the last of the classical giants, once said that some composers tended to develop an over-sublimated technique which produces images of emotions that are far removed from any emotional experience, a relatively normal human being ever has. That is just the point. High art can never be totally democratised. There is a barrier between the egghead and the hoi polloi and it would be lazy idealism to ignore this. When Bach played and Beethoven roared, who was then the gentleman? The pity of it is that while talking music to the masses, all known rules are broken and improvisation becomes king. That, roughly speaking, is how jazz was born; by dropping discipline, inspiration, deep personal emotions and every element of creative art and adopting improvisation as its main rationale. Why they even tried to smuggle bits of jazz into serious music so that the composers could somehow survive. Now they are going a step further: learn it by ear, don't write down the stuff, make it up as you go along and hope , by these shoddy techniques, that everyone present will applaud and, thus provide the composer and the performers with their daily bread.

Which of the following words can best replace the word 'raucous' in the paragraph? [Question ID = 12832]

1. Smoothing [Option ID = 21326]
2. Pleasant [Option ID = 21327]
3. Popular [Option ID = 21328]
4. Shrill [Option ID = 21325]

Correct Answer :-
- Shrill [Option ID = 21325]

4) Read the paragraph below and answer the questions that follow:
A jolly musicologist by the entirely unobjectionable name of Henry Pleasants has written a book called "The Agony of Modern Music". That word 'agony' is right. Much of what passes for music of these times is raucous noise and the excuse for persisting with it is that every common youngster understands and likes it. That pleasant fellow concedes that 'serious' music is virtually dead. This may be dismissed as yet another pleasantry which the undirected young indulge in. Paul Hindesmith, possibly one of the last of the classical giants, once said that some composers tended to develop an over-sublimated technique which produces images of emotions that are far removed from any emotional experience, a relatively normal human being ever has. That is just the point. High art can never be totally democratised. There is a barrier between the egghead and the hoi polloi and it would be lazy idealism to ignore this. When Bach played and Beethoven roared, who was then the gentleman? The pity of it is that while talking music to the masses, all known rules are broken and improvisation becomes king. That, roughly speaking, is how jazz was born; by dropping discipline, inspiration, deep personal emotions and every element of creative art and adopting improvisation as its main rationale. Why they even tried to smuggle bits of jazz into serious music so that the composers could somehow survive. Now they are going a step further: learn it by ear, don't write down the stuff, make it up as you go along and hope , by these shoddy techniques, that everyone present will applaud and, thus provide the composer and the performers with their daily bread.

Speaking of techniques of some composers Paul Hindesmith said that they evoked image of emotions [Question ID = 12833]

1. never felt by masses [Option ID = 21331]
2. not experienced by normal people [Option ID = 21329]
3. not experienced by eggheads [Option ID = 21332]
4. felt only by subnormal people [Option ID = 21330]

Correct Answer :-
- not experienced by normal people [Option ID = 21329]

Topic:- DU_J19_MSC_OR_T2

1) In the following questions, a statement is followed by three assumptions numbered I, II and III. Consider the statement and following assumptions, decide which of the assumptions is implicit in the statement and choose the correct alternative accordingly.
Statement: The Government of India has set up one-stop facilitation counters manned by trained staff for attending to various needs of the foreign tourists at all the international airports.
Assumptions: I. There is adequate trained staff available to man these counters in shifts.
II. The services provided by these counters will help boosting inflow of foreign tourists.
III. Majority of the foreign tourists need variety of services when they reach India.

[Question ID = 12836]

1. all are implicit [Option ID = 21344]
2. only III is implicit [Option ID = 21342]
3. only II and III are implicit [Option ID = 21343]
4. only I and II are implicit [Option ID = 21341]

Correct Answer :-

- only I and II are implicit [Option ID = 21341]

2) In the following questions, a statement is followed by three assumptions numbered I, II and III. Consider the statement and following assumptions, decide which of the assumptions is implicit in the statement and choose the correct alternative accordingly.
Statement: The successful man has the ability to judge himself correctly.
Assumptions: I. Inability to judge correctly causes failure.
II. To judge others is of no use to a successful man.
III. The successful man cannot make a wrong judgment.

[Question ID = 12835]

1. all are implicit [Option ID = 21338]
2. none is implicit [Option ID = 21337]
3. only II and III are implicit [Option ID = 21340]
4. only I and II are implicit [Option ID = 21339]

Correct Answer :-

- none is implicit [Option ID = 21337]

Topic:- DU_J19_MSC_OR_T3

1) Identify the pair of words that bear the same relationship to each other as the words of the given pair bear in the question.

Branch : Tree [Question ID = 12838]

1. Bulb : Filament [Option ID = 21350]
2. Crest : Wave [Option ID = 21349]
3. Water : Tap [Option ID = 21352]
4. Clothes : Cupboard [Option ID = 21351]

Correct Answer :-

- Crest : Wave [Option ID = 21349]

2) Identify the pair of words that bear the same relationship to each other as the words of the given pair bear in the question.

Sale : Purchase [Question ID = 12839]

1. Profit : Loss [Option ID = 21356]
2. Give : Receive [Option ID = 21353]
3. Shop : Market [Option ID = 21354]
4. Cash : Credit [Option ID = 21355]

Correct Answer :-

- Give : Receive [Option ID = 21353]

Topic:- DU_J19_MSC_OR_T4

1) The accessibility which is an important attribute of maintainability can be affected by [Question ID = 12875]

1. type of maintenance tasks to be performed through the access opening [Option ID = 21498]
2. all of these [Option ID = 21500]
3. location of item and its associated environment [Option ID = 21497]
4. degree of danger involved in using access opening [Option ID = 21499]

Correct Answer :-

- location of item and its associated environment [Option ID = 21497]

2) If the chance of A hitting a target is 3 times out of four and of B 4 times out of 5 and of C 5 times out of 6 then the probability that target will be hit in two hits is [Question ID = 12931]

1. 47/120 [Option ID = 21723]
2. 19/24 [Option ID = 21721]
3. none of these [Option ID = 21724]
4. 23/30 [Option ID = 21722]

Correct Answer :-

- 19/24 [Option ID = 21721]

3) If the customer arrivals are completely random, then _____ is followed? [Question ID = 12868]

1. poisson distribution [Option ID = 21471]
2. probability concept [Option ID = 21472]
3. deterministic model [Option ID = 21469]
4. statistical model [Option ID = 21470]

Correct Answer :-

- deterministic model [Option ID = 21469]

4) If the roots of the equation $x^3-9x^2+26x-24 = 0$ are in AP, then the roots are [Question ID = 12884]

1. 1, 2, 3 [Option ID = 21533]
2. 0, 1, 2 [Option ID = 21536]
3. 3, 4, 5 [Option ID = 21535]
4. 2, 3, 4 [Option ID = 21534]

Correct Answer :-

- 1, 2, 3 [Option ID = 21533]

5) Which of the following is not an assumption made in deriving an equation for economic order quantity (EOQ)?

[Question ID = 12854]

1. Review the inventory system periodically [Option ID = 21416]
2. Shortages are not allowed [Option ID = 21415]
3. The ordering cost, holding cost, and the unit price remain constant [Option ID = 21414]
4. The replenishment occurs instantaneously [Option ID = 21413]

Correct Answer :-

- The replenishment occurs instantaneously [Option ID = 21413]

6) A network topology is

[Question ID = 12906]

1. LAN [Option ID = 21621]
2. MAN [Option ID = 21623]
3. BUS [Option ID = 21624]
4. WAN [Option ID = 21622]

Correct Answer :-

- LAN [Option ID = 21621]

7) The _____ assumes that arrivals join a queue that is of unlimited size, waiting in line until their turn for service comes on a FIFO basis and then enter a service facility consisting of a single channel. [Question ID = 12869]

1. simplest waiting line model [Option ID = 21475]
2. waiting line [Option ID = 21473]
3. LCLS [Option ID = 21474]
4. FSFC [Option ID = 21476]

Correct Answer :-

- waiting line [Option ID = 21473]

8) In graphical method the restriction on number of constraints is [Question ID = 12853]

1. 2 [Option ID = 21409]
2. none of these [Option ID = 21412]
3. not more than 3 [Option ID = 21411]
4. 3 [Option ID = 21410]

Correct Answer :-

- 2 [Option ID = 21409]

9) Information on a computer is stored as _____ [Question ID = 12904]

1. analog data [Option ID = 21613]
2. none of these [Option ID = 21616]
3. digital data [Option ID = 21614]
4. watts data [Option ID = 21615]

Correct Answer :-

- analog data [Option ID = 21613]

10) Product A takes 5 machine hours and Product B takes 6 machine hours. The total time available for machine hours is 36. The constraint equation is

[Question ID = 12861]

1. $5x+6y \leq 36$ [Option ID = 21442]
2. $5x+6y=36$ [Option ID = 21441]
3. $5x+6y \geq 36$ [Option ID = 21443]
4. none of these [Option ID = 21444]

Correct Answer :-

- $5x+6y=36$ [Option ID = 21441]

11) Significance of simple correlation coefficient can be tested by [Question ID = 12925]

1. F-test [Option ID = 21700]
2. z-test [Option ID = 21698]
3. t-test [Option ID = 21697]
4. chi-square-test [Option ID = 21699]

Correct Answer :-

- t-test [Option ID = 21697]

12) A hypothesis may be classified as [Question ID = 12927]

1. composite [Option ID = 21706]
2. simple [Option ID = 21705]
3. null [Option ID = 21707]
4. all of these [Option ID = 21708]

Correct Answer :-

- simple [Option ID = 21705]

13) The synonym of the word Zest is [Question ID = 12842]

1. Pleasure [Option ID = 21365]
2. Distaste [Option ID = 21366]
3. Flop [Option ID = 21367]
4. Encircles [Option ID = 21368]

Correct Answer :-

- Pleasure [Option ID = 21365]

14) If A + D = B + C, A + E = C + D, 2C < A + E and 2A > B + D then

[Question ID = 12844]

1. B > C > D > E > A [Option ID = 21376]
2. B > A > D > C > E [Option ID = 21374]
3. D > B > C > A > E [Option ID = 21375]
4. A > B > C > D > E [Option ID = 21373]

Correct Answer :-

- A > B > C > D > E [Option ID = 21373]

15) The boolean expression (A'+B'+C)' is equivalent to [Question ID = 12911]

1. A'B'C' [Option ID = 21644]
2. ABC [Option ID = 21642]
3. ABC' [Option ID = 21641]
4. A'B'C [Option ID = 21643]

Correct Answer :-

- ABC' [Option ID = 21641]

16) If *A* is the set of even natural numbers less than 8 and *B* is the set of prime numbers less than 7, then the number of relations from *A* to *B* is

[Question ID = 12894]

1. 2^9 [Option ID = 21573]
2. 2^9 - 1 [Option ID = 21576]
3. 9^2 [Option ID = 21574]
4. 3^2 [Option ID = 21575]

Correct Answer :-

- 2^9 [Option ID = 21573]

17) The system reliability of a parallel configuration is _____ the reliabilities of each individual component. [Question ID = 12876]

1. equal to [Option ID = 21503]
2. none of these [Option ID = 21504]
3. greater than [Option ID = 21501]
4. smaller than [Option ID = 21502]

Correct Answer :-

- greater than [Option ID = 21501]

18) In a certain code, PRODUCTIONS is coded as QQPCVEUHPMT. How is ORIENTATION written in that code?

[Question ID = 12848]

1. PQJDOUBUJPO [Option ID = 21390]
2. PQJDOVBSJNO [Option ID = 21389]
3. NSHFMVBSJNO [Option ID = 21392]
4. PSJFOVBSJNO [Option ID = 21391]

Correct Answer :-

- PQJDOVBSJNO [Option ID = 21389]

19) In a linear programming problem, its degenerate basic feasible solutions and vertices of its feasible region have _____ correspondence.

[Question ID = 12864]

1. one-one [Option ID = 21453]
2. one-many [Option ID = 21455]
3. many-many [Option ID = 21456]
4. many-one [Option ID = 21454]

Correct Answer :-

- one-one [Option ID = 21453]

20) In a regression line of *Y* on *X*, the variable *X* is known as [Question ID = 12924]

1. independent variable [Option ID = 21693]
2. explanatory variable [Option ID = 21695]
3. regressor [Option ID = 21694]
4. all of these [Option ID = 21696]

Correct Answer :-

- independent variable [Option ID = 21693]

21) Given the failure time probability density function $f(t)=\lambda e^{-\lambda t}$, the reliability is obtained as [Question ID = 12874]

1. $R(t)=e^{(1-\lambda)t}$ [Option ID = 21495]
2. $R(t)=e^{-\lambda t}$ [Option ID = 21493]
3. $R(t)= 1-e^{-\lambda t}$ [Option ID = 21494]
4. $R(t)= 1+e^{-\lambda t}$ [Option ID = 21496]

Correct Answer :-

- $R(t)=e^{-\lambda t}$ [Option ID = 21493]

22) A suburban specialty restaurant has developed a single drive-thru window. Customers order, pay, and pick up their food at the same window. Arrivals follow a Poisson distribution while service times follow an exponential distribution. If the average number of arrivals is 6 per hour and the service rate is 2 every 15 minutes, then the average number of customers waiting in line behind the person being served is [Question ID = 12873]

1. 0.5 [Option ID = 21489]
2. 3 [Option ID = 21492]
3. 2.25 [Option ID = 21491]
4. 0.75 [Option ID = 21490]

Correct Answer :-

- 0.5 [Option ID = 21489]

23) The decimal number 235 is equivalent to [Question ID = 12910]

1. $(1010\ 1011)_2$ [Option ID = 21638]
2. $(1110\ 1001)_2$ [Option ID = 21640]
3. $(1110\ 1011)_2$ [Option ID = 21639]
4. $(1110\ 1111)_2$ [Option ID = 21637]

Correct Answer :-

- $(1110\ 1111)_2$ [Option ID = 21637]

24) The component required to process data into information and consists of integrated circuits is known as [Question ID = 12903]

1. CPU [Option ID = 21611]
2. ROM [Option ID = 21612]
3. Hard Disk [Option ID = 21609]
4. RAM [Option ID = 21610]

Correct Answer :-

- Hard Disk [Option ID = 21609]

25) *F*-distribution is applied for [Question ID = 12921]

1. testing the equality of two population variances [Option ID = 21681]
2. for testing the equality of two or more population means [Option ID = 21682]
3. for testing equality of several regression coefficients [Option ID = 21683]
4. all of these [Option ID = 21684]

Correct Answer :-

- testing the equality of two population variances [Option ID = 21681]

26) The curve represented by the equations: $x = a(\theta - \sin\theta)$, $y = a(1 - \cos\theta)$ is a [Question ID = 12890]

1. hyperbola [Option ID = 21560]
2. asteroid [Option ID = 21559]
3. cycloid [Option ID = 21558]
4. cardiode [Option ID = 21557]

Correct Answer :-

- cardiode [Option ID = 21557]

27) A linear programming problem in standard form has *m* constraints and *n* variables. The number of basic feasible solutions will be [Question ID = 12863]

1. none of these [Option ID = 21452]
2. $\binom{n}{m}$ [Option ID = 21449]
3. $\geq \binom{n}{m}$ [Option ID = 21451]
4. $\leq \binom{n}{m}$ [Option ID = 21450]

Correct Answer :-

- $\binom{n}{m}$ [Option ID = 21449]

28) A family of parametric distribution in which mean is always greater than variance is [Question ID = 12930]

1. geometric distribution [Option ID = 21718]
2. both binomial distribution and geometric distribution [Option ID = 21719]
3. neither binomial distribution nor geometric distribution [Option ID = 21720]
4. binomial distribution [Option ID = 21717]

Correct Answer :-

- binomial distribution [Option ID = 21717]

29) The area of the region bounded by the straight line x-2y+2 = 0 , the ordinates x=1, x=2 and x-axis is [Question ID = 12889]

1. 5/4 [Option ID = 21555]
2. 3/4 [Option ID = 21554]
3. 7/4 [Option ID = 21553]
4. 3/2 [Option ID = 21556]

Correct Answer :-

- 7/4 [Option ID = 21553]

30) Scandisk is performed by using [Question ID = 12913]

1. operating system software [Option ID = 21650]
2. utility software [Option ID = 21651]
3. none of these [Option ID = 21652]
4. application software [Option ID = 21649]

Correct Answer :-

- application software [Option ID = 21649]

31) A man walks 30 m South. Then turning to his right he walks 30 m. Then turning to his left he walks 20 m. Again turning to his left he walks 30 m. How far is he from his starting position? [Question ID = 12850]

1. 20 m [Option ID = 21398]
2. 30 m [Option ID = 21397]
3. none of these [Option ID = 21400]
4. 80 m [Option ID = 21399]

Correct Answer :-

- 30 m [Option ID = 21397]

32) 'A+B' means 'A is the son of B'; 'A-B' means 'A is the wife of B'; 'A x B' means 'A is the brother of B'; 'A/B' means 'A is the mother of B' and 'A=B' means 'A is the sister of B'. Then 'P=R/Q" means [Question ID = 12849]

1. Q is the niece of P [Option ID = 21395]
2. Q is the daughter of P [Option ID = 21396]
3. P is the aunt of Q [Option ID = 21393]
4. P is the sister of Q [Option ID = 21394]

Correct Answer :-

- P is the aunt of Q [Option ID = 21393]

33)

A meaningful order in which the words given below can be arranged is
(i) Index (ii) Contents (iii) Title (iv) Chapters (v) Introduction [Question ID = 12852]

1. (iii), (v), (i), (ii), (iv) [Option ID = 21408]
2. (iii), (ii), (v), (iv), (i) [Option ID = 21407]
3. (iii), (ii), (v), (i), (iv) [Option ID = 21406]
4. (ii), (iii), (iv), (v), (i) [Option ID = 21405]

Correct Answer :-

- (ii), (iii), (iv), (v), (i) [Option ID = 21405]

34) The root of equation $8x^3+12x^2+4x+1 = 0$ repeated thrice is [Question ID = 12883]

1. x = -3/2 [Option ID = 21530]
2. x = 3/2 [Option ID = 21532]
3. x = -1/2 [Option ID = 21529]
4. x = 1/2 [Option ID = 21531]

Correct Answer :-

- x = -1/2 [Option ID = 21529]

35) A production manager of a manufacturing organization is asked to manage and optimize the utilization of the resources. He/she has to deal with all the aspects of buying like when to buy, how much to buy, etc. Which of the following tools or techniques of Operational Research should be used? [Question ID = 12867]

1. linear programming [Option ID = 21465]
2. inventory control methods [Option ID = 21466]
3. transportation model [Option ID = 21467]
4. assignment model [Option ID = 21468]

Correct Answer :-

- linear programming [Option ID = 21465]

36) In case of positively skewed distribution, the extreme values lie in the [Question ID = 12919]

1. middle [Option ID = 21675]
2. right tail [Option ID = 21674]
3. left tail [Option ID = 21673]
4. anywhere [Option ID = 21676]

Correct Answer :-

- left tail [Option ID = 21673]

37) For a positively skewed distribution which of the following is true? [Question ID = 12926]

1. mean > median [Option ID = 21703]
2. mean > mode [Option ID = 21704]
3. median > mode [Option ID = 21701]
4. mode > mean [Option ID = 21702]

Correct Answer :-

- median > mode [Option ID = 21701]

38) In which of the following examples the linear programming technique can be used?
1) in problems where objective functions are linear
2) in distribution problems
3) in getting integer valued solutions
4) in problems where objective functions are non-linear [Question ID = 12858]

1. options 1 & 3 [Option ID = 21430]
2. options 2 & 4 [Option ID = 21432]
3. options 2 & 3 [Option ID = 21431]
4. options 1 & 2 [Option ID = 21429]

Correct Answer :-
- options 1 & 2 [Option ID = 21429]

39) If the optimal solution of a linear programming problem occurs at X=(1,0,0,2) and y=(0,1,0,3) then the optimal solution also occurs at

[Question ID = 12859]

1. (0, 1, 5, 0) [Option ID = 21435]
2. (1/2, 1/2, 0, 5/2) [Option ID = 21434]
3. (-1/2, -1/2, 0, -5/2) [Option ID = 21436]
4. (2, 0, 3, 0) [Option ID = 21433]

Correct Answer :-
- (2, 0, 3, 0) [Option ID = 21433]

40) Given below is a sentence with a part underlined. Four options are given to suggest the meaning of the underlined phrase or idiom. Choose the most appropriate meaning from the given options.
The state government has taken a very hard line against the Naxals over the past few months. [Question ID = 12841]

1. has been uncompromising [Option ID = 21362]
2. has faced a lot of problems [Option ID = 21364]
3. has taken a lot of risk [Option ID = 21363]
4. has taken a tough decision [Option ID = 21361]

Correct Answer :-
- has taken a tough decision [Option ID = 21361]

41) In simple random sampling with replacement, the same sampling unit may be included in the sample [Question ID = 12923]

1. only once [Option ID = 21689]
2. none of these [Option ID = 21692]
3. only twice [Option ID = 21690]
4. more than once [Option ID = 21691]

Correct Answer :-
- only once [Option ID = 21689]

42) Out of the two types of error in testing, the more severe error is

[Question ID = 12928]

1. type I error [Option ID = 21709]
2. type II error [Option ID = 21710]
3. no error is severe [Option ID = 21712]
4. both type I error and type II error are equally severe [Option ID = 21711]

Correct Answer :-

- type I error [Option ID = 21709]

43) -12 is equal to signed binary number

[Question ID = 12914]

1. 11000000 [Option ID = 21656]
2. 00001000 [Option ID = 21654]
3. 10001100 [Option ID = 21653]
4. 10000000 [Option ID = 21655]

Correct Answer :-

- 10001100 [Option ID = 21653]

44) The limiting relative frequency approach of probability is known as [Question ID = 12929]

1. classical probability [Option ID = 21714]
2. mathematical probability [Option ID = 21715]
3. all of these [Option ID = 21716]
4. statistical probability [Option ID = 21713]

Correct Answer :-

- statistical probability [Option ID = 21713]

45) If in any simplex iteration the minimum ratio rule results in a tie, then the linear programming problem has [Question ID = 12855]

1. degenerate basic feasible solution [Option ID = 21418]
2. unbounded solution [Option ID = 21419]
3. infeasible solution [Option ID = 21420]
4. non degenerate basic feasible solution [Option ID = 21417]

Correct Answer :-

- non degenerate basic feasible solution [Option ID = 21417]

46) The number of customers in queue and also those being served in the queue relate to the ____ efficiency and ____. [Question ID = 12870]

1. server, capacity [Option ID = 21479]
2. facility, capacity [Option ID = 21480]
3. facility, queue length [Option ID = 21477]
4. service, capacity [Option ID = 21478]

Correct Answer :-

- facility, queue length [Option ID = 21477]

47) Every basic feasible solution of a general assignment problem, having a square cost matrix of order *n* can have assignments equal to

[Question ID = 12866]

1. n [Option ID = 21463]
2. $n - 1$ [Option ID = 21464]
3. $2n - 1$ [Option ID = 21462]
4. $2n + 1$ [Option ID = 21461]

Correct Answer :-

- $2n + 1$ [Option ID = 21461]

48) The continuous real-valued function defined by $f(x) = (x^2+1)^{2011}$ is

[Question ID = 15480]

1. onto but not one-one [Option ID = 31917]
2. one-one but not onto [Option ID = 31918]
3. neither one-one nor onto [Option ID = 31920]
4. both one-one and onto [Option ID = 31919]

Correct Answer :-

- onto but not one-one [Option ID = 31917]

49) There are some benches in a classroom. If 4 students sit on each bench then 3 benches are left unoccupied; however, if 3 students sit on each bench, 3 students are left standing. How many students are there in the class? [Question ID = 12845]

1. 48 [Option ID = 21378]
2. 56 [Option ID = 21379]
3. 36 [Option ID = 21377]
4. 64 [Option ID = 21380]

Correct Answer :-

- 36 [Option ID = 21377]

50) Pareto's Law holds that

[Question ID = 12857]

1. 80 percent of all items account for 80 percent of the rupee value of 20 percent of those items [Option ID = 21425]
2. 20 percent of all items account for 20 percent of the usage value of 80 percent of those items [Option ID = 21426]
3. 80 percent of all items contain 20 percent of the value of those items [Option ID = 21427]
4. a fixed locator system is operationally efficient 20 percent of the time for 80 percent of all items [Option ID = 21428]

Correct Answer :-

- 80 percent of all items account for 80 percent of the rupee value of 20 percent of those items [Option ID = 21425]

51) Matrix multiplication is [Question ID = 12882]

1. associative and not commutative [Option ID = 21527]
2. commutative and associative [Option ID = 21526]

3. commutative and not associative [Option ID = 21525]
4. neither commutative nor associative [Option ID = 21528]

Correct Answer :-

- commutative and not associative [Option ID = 21525]

52) A player rolls a fair die. He gets -1 point if the die turns up with 1 to 3 spots and gets 1 point if the die turns up with 4 to 6 spots. In this way a variable X has values -1 and 1. Also one gets 0 point if the die turns up with 1 spot and 1 point if the die turns up with 6 spots. In this way a second variable Y takes two values 0 and 1. The joint probability distribution is given in the following table:

X\Y	0	1	$P_X(x)$
-1	1/6	2/6	1/2
1	2/6	1/6	1/2
$P_Y(y)$	1/2	1/2	1

For the given joint distribution, the expected value of X is

[Question ID = 12932]

1. $E(X)$ = 1/2 [Option ID = 21726]
2. $E(X)$ = 1 [Option ID = 21727]
3. $E(X)$ = 1/4 [Option ID = 21728]
4. $E(X)$ = 0 [Option ID = 21725]

Correct Answer :-

- $E(X)$ = 0 [Option ID = 21725]

53) The value of 'c' in Rolle's Theorem where -2 $< c <$ 1 and $f(x) = x^3 - 3x + 2$, is equal to

[Question ID = 12899]

1. 0 [Option ID = 21595]
2. -1 [Option ID = 21594]
3. 1/2 [Option ID = 21596]
4. 1 [Option ID = 21593]

Correct Answer :-

- 1 [Option ID = 21593]

54) $\lim_{x \to \infty} \frac{\log x}{x} =$

[Question ID = 12902]

1. 0 [Option ID = 21605]
2. -1 [Option ID = 21607]
3. does not exist [Option ID = 21608]
4. 1 [Option ID = 21606]

Correct Answer :-

- 0 [Option ID = 21605]

55) Let v_1, v_2, v_3 be columns of a 3x3 matrix. Given that $\{v_1, v_2, v_3\}$ is linearly independent, the rank A

[Question ID = 12880]

1. is less than 3 [Option ID = 21518]
2. information inadequate [Option ID = 21520]
3. is greater than 3 [Option ID = 21519]
4. is 3 [Option ID = 21517]

Correct Answer :-

- is 3 [Option ID = 21517]

56) The value of definite integral $\int_0^{\pi/2} \sin^2 x \cos^3 x \, dx$ is

[Question ID = 12888]

1. 3/5 [Option ID = 21551]
2. 2/3 [Option ID = 21552]
3. 2/5 [Option ID = 21550]
4. 2/15 [Option ID = 21549]

Correct Answer :-

- 2/15 [Option ID = 21549]

57) Let $f(x) = \begin{cases} 2x & 0 \le x \le 1 \\ 2-x & 1 < x \le 2 \\ x^2 - 2x & x > 2 \end{cases}$. Then

[Question ID = 12886]

1. f is continuous at 1 and 2 [Option ID = 21543]

2. f is discontinuous at 1 and 2 [Option ID = 21544]
3. f is continuous at 1 and discontinuous at 2 [Option ID = 21541]
4. f is continuous at 2 and discontinuous at 1 [Option ID = 21542]

Correct Answer :-

- f is continuous at 1 and discontinuous at 2 [Option ID = 21541]

58) Let $v_1 = \begin{bmatrix} 2 \\ 3 \end{bmatrix}, v_2 = \begin{bmatrix} 3 \\ 4 \end{bmatrix}, v_3 = \begin{bmatrix} 4 \\ 6 \end{bmatrix}$, then which one of the following statements is false?

[Question ID = 12879]

1. $\{v_1, v_2, v_3\}$ is linearly dependent [Option ID = 21513]
2. $\{v_2, v_3\}$ is linearly independent [Option ID = 21515]
3. $\{v_1, v_3\}$ is linearly dependent [Option ID = 21514]
4. $\{v_1, v_3\}$ is linearly dependent [Option ID = 21516]

Correct Answer :-

- $\{v_1, v_2, v_3\}$ is linearly dependent [Option ID = 21513]

59) The series $\sum_{n=1}^{\infty} \frac{x^n}{3^n}$ converges for

[Question ID = 12897]

1. |x| > 3 [Option ID = 21585]
2. |x| < 3 [Option ID = 21586]
3. x = 3 [Option ID = 21587]
4. for every x ϵ R [Option ID = 21588]

Correct Answer :-

- |x| > 3 [Option ID = 21585]

60) Let $y = 1 + x + \frac{x^2}{2!} + \frac{x^3}{3!} + \ldots\ldots$ .Then (y_n), the n^{th} derivative of y is

[Question ID = 12887]

1. 2*y* [Option ID = 21547]
2. *y*/2 [Option ID = 21546]
3. *y* [Option ID = 21545]
4. 1 [Option ID = 21548]

Correct Answer :-

- *y* [Option ID = 21545]

61) The maximum value of the function $f(x) = |\cos x - 2|$ is

[Question ID = 12901]

1. 2 [Option ID = 21604]
2. 0 [Option ID = 21602]
3. 1 [Option ID = 21603]
4. 3 [Option ID = 21601]

Correct Answer :-

- 3 [Option ID = 21601]

62) An integrating factor of the differential equation $x\frac{dy}{dx} + (2x+1)y = \cos x$ is

[Question ID = 12891]

1. xe^{2x} [Option ID = 21562]
2. xe^{3x} [Option ID = 21561]
3. x^2e^{3x} [Option ID = 21563]
4. x^2e^{2x} [Option ID = 21564]

Correct Answer :-

- xe^{3x} [Option ID = 21561]

63) The function $f(x) = x^3 - 6x^2 + 9x + 1$ is increasing in

[Question ID = 12900]

1.]-∞, 3] [Option ID = 21600]
2. [1, ∞[[Option ID = 21599]
3. [1, 3] [Option ID = 21598]
4.]-∞, 1] and [3, ∞[[Option ID = 21597]

Correct Answer :-

-]-∞, 1] and [3, ∞[[Option ID = 21597]

64) A particular solution of the initial value problem: $\frac{dy}{dx} = -6xy,\ y(0) = 7$ is

[Question ID = 12893]

1. $7e^{-3x^2}$ [Option ID = 21570]
2. $7 + e^{-3x^2}$ [Option ID = 21571]
3. $7e^{x^2}$ [Option ID = 21572]
4. $7e^{-2x^2}$ [Option ID = 21569]

Correct Answer :-

- $7e^{-2x^2}$ [Option ID = 21569]

65) What is the output of the following code?

```
#include<stdio.h>
void main()
{int i;
  for(i=0;i<10;i++);
  printf(""%d "",i);}
```

[Question ID = 12909]

1. Compile Error [Option ID = 21634]
2. 0 1 2 3 4 5 6 7 8 9 [Option ID = 21633]
3. 9 [Option ID = 21636]
4. Run Time Error [Option ID = 21635]

Correct Answer :-

- 0 1 2 3 4 5 6 7 8 9 [Option ID = 21633]

66) MODI stands for [Question ID = 12865]

1. Mendel's distribution method [Option ID = 21458]
2. Modern distribution [Option ID = 21457]
3. Model index method [Option ID = 21460]
4. Modified distribution method [Option ID = 21459]

Correct Answer :-

- Modern distribution [Option ID = 21457]

67) For what values of λ and k, does the following system of equations have a unique solution?

$x+2y+3z = 1$
$2x+5y+7z = 2$
$3x+8y+\lambda z = k$

[Question ID = 12881]

1. $\lambda \neq 11,\ k = 3$ [Option ID = 21524]
2. $\lambda = 11,\ k \neq 3$ [Option ID = 21522]
3. $\lambda = 11,\ k = 3$ [Option ID = 21521]
4. for every $\lambda,\ k \in R$ [Option ID = 21523]

Correct Answer :-

- $\lambda = 11,\ k = 3$ [Option ID = 21521]

68) For $x_1, x_2 \geq 0$, consider the system : $x_1+2x_2-x_3-2x_4-3x_5 = -1$, $2x_2+x_3+5x_4-3x_5 = -1$. A solution $x_1=0$, $x_2=1$, $x_3=0$, $x_4=0$, $x_5=1$ to the system is

[Question ID = 12862]

1. a feasible solution [Option ID = 21447]
2. none of these [Option ID = 21448]
3. a basic solution [Option ID = 21445]
4. a basic feasible solution [Option ID = 21446]

Correct Answer :-

- a basic solution [Option ID = 21445]

69) Student's t-distribution is symmetrical about its mean implies that [Question ID = 12922]

1. both odd order moments are zero and even order moments are zero [Option ID = 21687]
2. even order moments are zero [Option ID = 21686]
3. none of odd order moments are zero and even order moments are zero [Option ID = 21688]
4. odd order moments are zero [Option ID = 21685]

Correct Answer :-

- odd order moments are zero [Option ID = 21685]

70) In a certain code language, BREAKTHROUGH is written as EAOUHRBRGHKT. How is DISTRIBUTION written in that code? [Question ID = 12847]

1. TISTBUONDIRI [Option ID = 21385]
2. STTIBUONRIDI [Option ID = 21386]
3. STTIBUDIONRI [Option ID = 21387]
4. RISTTIBUDION [Option ID = 21388]

Correct Answer :-

- TISTBUONDIRI [Option ID = 21385]

71) Sum of squared deviations about mean is [Question ID = 12918]

1. zero [Option ID = 21671]
2. none of these [Option ID = 21672]

3. maximum [Option ID = 21669]
4. minimum [Option ID = 21670]

Correct Answer :-

- maximum [Option ID = 21669]

72) Which of the following is not a recognized standard for reliability, availability and maintainability? [Question ID = 12877]

1. IEEE [Option ID = 21507]
2. SEA [Option ID = 21505]
3. SAE [Option ID = 21508]
4. IEC [Option ID = 21506]

Correct Answer :-

- SEA [Option ID = 21505]

73) Which of the following condition is required for deadlock to be possible? [Question ID = 12908]

1. a process may hold allocated resources while awaiting assignment of other resources [Option ID = 21630]
2. no resource can be forcibly removed from a process holding it [Option ID = 21631]
3. all of these [Option ID = 21632]
4. mutual exclusion [Option ID = 21629]

Correct Answer :-

- mutual exclusion [Option ID = 21629]

74) Which of the cost estimates and performance measures are not used for economic analysis of a queuing system? [Question ID = 12872]

1. cost per server per unit of time [Option ID = 21485]
2. cost per unit of time for a customer waiting in the system [Option ID = 21486]
3. average waiting time of customers in the system [Option ID = 21488]
4. average number of customers in the system [Option ID = 21487]

Correct Answer :-

- cost per server per unit of time [Option ID = 21485]

75) Which of the two statements is true?
(1) Every convergent sequence is bounded.
(2) Every bounded sequence is convergent. [Question ID = 12896]

1. Statement (1) is true and (2) is false [Option ID = 21582]
2. Statement (1) is false and (2) is true [Option ID = 21583]
3. Statements (1) and (2) both are true [Option ID = 21581]
4. Statements (1) and (2) both are false [Option ID = 21584]

Correct Answer :-

- Statements (1) and (2) both are true [Option ID = 21581]

76) In an information system, alphanumeric data normally takes the form of [Question ID = 12905]

1. human voices and sounds [Option ID = 21620]

2. numbers, alphabetical characters and special characters [Option ID = 21618]
3. graphic shapes and figures [Option ID = 21619]
4. sentences and paragraphs [Option ID = 21617]

Correct Answer :-

- sentences and paragraphs [Option ID = 21617]

77) Let $W_1 = \{(0,y) : y \in R\}$ and $W_2 = \{(x,0) : x \in R\}$, then

[Question ID = 12878]

1. W_1 is a subspace of R^2 and W_2 is not [Option ID = 21510]
2. W_1 and W_2 are subspaces of R^2 [Option ID = 21509]
3. W_1 and W_2 are not subspaces of R^2 [Option ID = 21512]
4. W_2 is a subspace of R^2 and W_1 is not [Option ID = 21511]

Correct Answer :-

- W_1 and W_2 are subspaces of R^2 [Option ID = 21509]

78) Let S = {1, 1/2, 1/3, ...} . Then the set S contains

[Question ID = 12895]

1. its infimum [Option ID = 21577]
2. its supremum [Option ID = 21578]
3. neither its infimum nor its supremum [Option ID = 21580]
4. both its infimum and supremum [Option ID = 21579]

Correct Answer :-

- its infimum [Option ID = 21577]

79) If B + 8 = C, A – 8 = C – 3, A + 6 =2D, B + D = 50 then A = [Question ID = 12846]

1. 37 [Option ID = 21382]
2. 27 [Option ID = 21383]
3. 40 [Option ID = 21381]
4. 23 [Option ID = 21384]

Correct Answer :-

- 40 [Option ID = 21381]

80) A solution to the problem of external fragmentation is [Question ID = 12907]

1. compaction [Option ID = 21625]
2. none of these [Option ID = 21628]
3. larger memory space [Option ID = 21626]
4. smaller memory space [Option ID = 21627]

Correct Answer :-

- compaction [Option ID = 21625]

81) The ordering cost is Rs. 100 per order for a certain type of commodity whose holding cost per unit is Rs. 2.40 per year. If the annual demand is 9,000 units and the replacement is instantaneous and no shortages are allowed then approximate EOQ is

[Question ID = 12871]

1. 870 units [Option ID = 21482]
2. 866 units [Option ID = 21481]
3. 850 units [Option ID = 21483]
4. 900 units [Option ID = 21484]

Correct Answer :-

- 866 units [Option ID = 21481]

82) The correct meaning of the idioms given in CAPITALS in: I do not MINCE MY WORDS is

[Question ID = 12843]

1. speak hesitatingly [Option ID = 21370]
2. none of these [Option ID = 21372]
3. take back my words [Option ID = 21369]
4. shout [Option ID = 21371]

Correct Answer :-

- take back my words [Option ID = 21369]

83) The linear homogenous differential equation with constant coefficients whose general solution is given by $c_1\cos 2x + c_2\sin 2x + c_3$ is

[Question ID = 12892]

1. $(D^3 - 4D)y = 0$ [Option ID = 21566]
2. $(D^3 + 4D)y = 0$ [Option ID = 21565]
3. $(D^3 - 2D)y = 0$ [Option ID = 21567]
4. $(D^3 + 2D)y = 0$ [Option ID = 21568]

Correct Answer :-

- $(D^3 + 4D)y = 0$ [Option ID = 21565]

84) The set $S=\{(x_1,x_2) : x_1+x_2 = 1\}$ has no vertex because it is

[Question ID = 12856]

1. not convex [Option ID = 21421]
2. not closed [Option ID = 21423]
3. not bounded [Option ID = 21422]
4. none of these [Option ID = 21424]

Correct Answer :-

- not convex [Option ID = 21421]

85) The NAND gate output will be low if the two inputs are

[Question ID = 12917]

1. 00 [Option ID = 21665]
2. 01 [Option ID = 21666]
3. 10 [Option ID = 21667]
4. 11 [Option ID = 21668]

Correct Answer :-

- 00 [Option ID = 21665]

86) The alternative which can replace the question mark in the following is

Microphone : Loud :: Microscope : ?

[Question ID = 12851]

1. Examine [Option ID = 21404]
2. Investigate [Option ID = 21402]
3. Magnify [Option ID = 21403]
4. Elongate [Option ID = 21401]

Correct Answer :-

- Elongate [Option ID = 21401]

87) The dual of the linear programming problem max $z = 2x_1 + x_2 + 3x_3$ subject to $x_1 - x_2 + x_3 \geq 5$, $x_1 \geq 0$, $x_2 \geq 0$, $x_3 \geq 0$ has an optimal objective value equal to

[Question ID = 12860]

1. 0 [Option ID = 21440]
2. 5 [Option ID = 21438]
3. -4 [Option ID = 21439]
4. -5 [Option ID = 21437]

Correct Answer :-

- -5 [Option ID = 21437]

88) The distribution for which mode does not exist is

[Question ID = 12920]

1. normal distribution [Option ID = 21677]
2. *F-distribution* [Option ID = 21679]
3. t-distribution [Option ID = 21678]
4. none of these [Option ID = 21680]

Correct Answer :-

- normal distribution [Option ID = 21677]

89) Which header file should be included to use functions like malloc() and calloc() in C language? [Question ID = 12912]

1. stdlib.h [Option ID = 21648]
2. dos.h [Option ID = 21647]
3. memory.h [Option ID = 21645]
4. string.h [Option ID = 21646]

Correct Answer :-

- memory.h [Option ID = 21645]

90) An equivalent representation for the Boolean expression A' + 1 is [Question ID = 12916]

1. 0 [Option ID = 21664]
2. 1 [Option ID = 21663]
3. A [Option ID = 21661]
4. A' [Option ID = 21662]

Correct Answer :-

- A [Option ID = 21661]

91) Anything that is complemented twice is equal to [Question ID = 12915]

1. 0 [Option ID = 21657]
2. its complement [Option ID = 21660]
3. 1 [Option ID = 21658]
4. itself [Option ID = 21659]

Correct Answer :-

- 0 [Option ID = 21657]

92) At least one eigen value of a singular matrix is

[Question ID = 12885]

1. zero [Option ID = 21539]
2. negative [Option ID = 21538]
3. imaginary [Option ID = 21540]
4. positive [Option ID = 21537]

Correct Answer :-

- positive [Option ID = 21537]