GLA University

Soft Skills (Even Sem)

First Mid Term Examination (2017-18)

Course- B.Tech   Year- III

Branch- All Branches

Instructions :

1. There are 3 sections in the paper.

2. Attempt all questions. The maximum marks for the test are 10.

3. The total time allocated is 60 minutes.

4. There will be no negative marking. Also, no marks will be awarded if more than one answer is marked.

5. The OMR form is printed on a special paper and the information given by the candidates will be scanned. Thus, the candidates are required to fill the forms carefully. Mutilated and damaged forms will be rejected by the scanner.

6. The candidates should ensure that the form is not folded, crumpled or mutilated in any manner. The candidates should not mark anything anywhere except wherever required. The black marks on the margin of the OMR form are important. The candidates should not tamper it with marker.

7. Only black& blue pen should be used to fill forms.

8. Each branch is identified with a specific subject code which should be written in subject column of OMR sheet

9. Write your University roll number in the roll no column of OMR sheet.

Name of Student:-…………………………………

Branch:-…………………………………………

Section-……………………………………..

Uni. Roll No: …………………………………

Signature of Invigilator-……………………………

S.N	Branch	Code
1	CS	1500
2	CE	1000
3	ECE	1300
4	EN	1400
5	EE	1100
6	ME	1200

All The Best

Section-1 (Quantitative Aptitude)-No of question-13, marks-3.25

Directions for Questions 1 to 5:
The bar graph given below shows the sales of books (in thousand numbers) from six branches of a publishing company during two consecutive years 2000 and 2001.
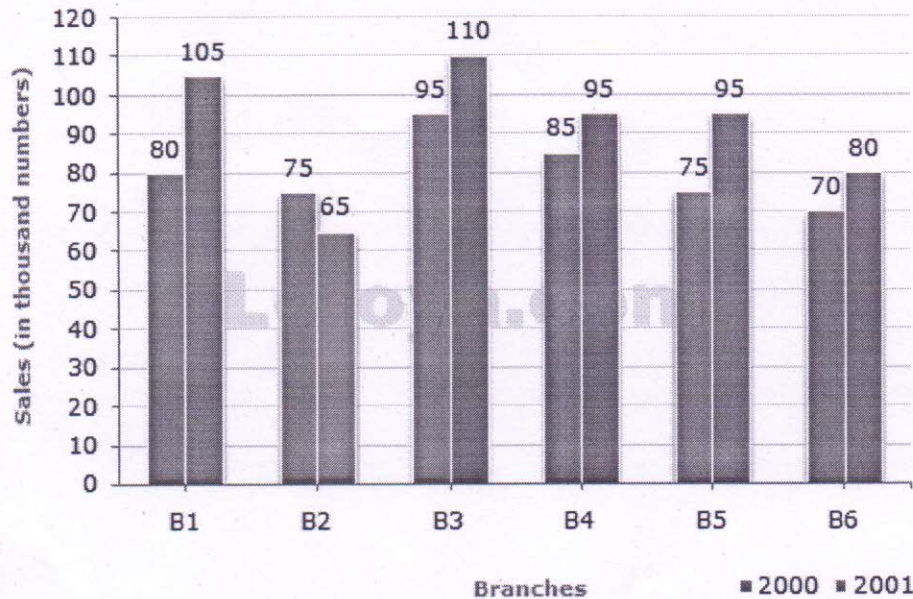
Q1.What is the ratio of the total sales of branch B2 for both years to the total sales of branch B4 for both years?
A. 2:3   B. 3:5   C. 4:5   D. 7:9   E. None of these

Q2. Total sales of branch B6 for both the years is what percent of the total sales of branches B3 for both the years?
A. 68.54%   B. 71.11%   C. 73.17%   D. 75.55%

Q3. What percent of the average sales of branches B1, B2 and B3 in 2001 is the average sales of branches B1, B3 and B6 in 2000?
A. 75%   B. 77.5%   C. 82.5%   D. 87.5%

Q4. What is the average sales of all the branches (in thousand numbers) for the year 2000?
A. 73   B. 80   C. 83   D. 88   E. None of these

Q5.Total sales of branches B1, B2 and B3 together for both the years is what percent more than total sales of B4 and B6 together ?
A. 50.5%   B. 31.5%   C. 43.5%   D. 60.6%

Q6. If Sp is doubled profit is tripled what is the initial profit percentage?
A. 75%   B. 100%   C. 82.5%   D. 87.5%   E. None of these

Q7. A fruit seller sells mangoes at the rate of Rs. 9 per kg and thereby loses 20%. At what price per kg, he should have sold them to make a profit of 5%?
A. Rs. 11.81   B. Rs. 12   C. Rs. 12.25   D. 12.31

Q8. Find last two digits 18^{96}
  A. 78   B. 76   C. 28   D. 98   E. None of these

Q9. How many factors does 1080 have ?
  A. 32   B. 42   C. 16   D. 28   E. None of these

Q10. How many zeros are there at the end of 95*96*55*45*74*64*84*99
  A. 3   B. 4   C. 1   D. 2   E. None of these

Q11. Q6: Evaluate 28% of 450 + 45% of 280
  A. 250   B. 251   C. 252   D. None of these

Q12. The price of a T.V. set is decreased by 20% as a result of which the sale increased by 25%. What will be effect on the total revenue of the shop?
  A. 0% change   B. 5% decrease   C. 5% increase   D. 10% increase

Q13. In an election, 30% of the voters voted for candidate A whereas 60% of the remaining voted for candidate B. The remaining voters did not vote. If the difference between those who voted for candidate A and those who did not vote was 600, how many individuals were eligible for casting vote in that election?
A. 10,000   B. 45,000   C. 30,000   D. 72,000   E. None of these

Section-2 (Reasoning Ability)-No of question-13, marks-03.25

Directions (Q. 14-18): In each question below are given three statements followed by two Conclusions numbered I and II. You have to take the given two statements to be true even if they seem to be at variance with commonly known facts and then decide which of the given conclusions logically follows from the statements, disregarding commonly known facts. Give answer

(A) if only conclusion I follows.
(B) if only conclusion II follows.
(C) if either conclusion I or conclusion II follows.
(D) if neither conclusion I nor conclusion II follows.
(E) if both conclusion I and conclusion II follow.

Q14. Statements:
(i) Some bananas are soaps.
(ii) Some powders are soaps.
(iii) Only detergents are powders.
Conclusions: I. Some soaps are detergents.
II. Some detergents are not soaps.

Q15. Statements:
(i) Some mobiles are pots.
(ii) Some pots are animals.
(iii) Some animals are cows.
Conclusions: I. Some pots are cows.
II. Some mobiles are cows.

Q16. Statements:
(i) Some papers are bottles.
(ii) No perfume is a paper.
(iii) All bottles are files.
Conclusions: I. Some bottles are not perfumes.
II. Some perfumes are not files.

Q17. Statements:
(i) All books are magazines.
(ii) All magazines are ice.
(iii) Some ice are drops.
Conclusions: I. There is a possibility that all drops are books.
II. At least some ice are books.

Q18. Statements:
(i) Some balls are tables.
(ii) Some tables are ipods.
(iii) All ipods are chairs.
Conclusions: I. Some chairs are balls.
II. Some balls are not chairs.

Direction for the questions (19/22)
Study the following information carefully to answer the question given below:

Seven friends P, F, R, T, Q, N and D are studying different specializations IT, Civil, HR, Marketing, Finance, Journalism and Pharmacy not necessarily in the same order. Each one of them have liking for a different color red, blue, green, yellow, pink, orange and grey not necessarily in the same order. Three of them are girls. P likes yellow colors but does not study IT or HR. The one who studies Civil, likes grey colors and is a girl. Q, who is sister of N, studies Marketing and likes pink colors. D's specialization is in pharmacy and likes red colors. N, the wife of R studies HR and likes green. F likes grey and R likes orange, the one who likes blue studies finance.

Q19: Who is studying civil Engineering?
(a) P
(b) T
(c) F
(d) Cannot be determined

Q20: Which of the following is the group of girls?
(a) F, D, N
(b) F, Q, N
(c) Q, N, P
(d) Cannot be determined

Q21: Which subject is studied by R?
(a) Civil
(b) Finance
(c) Journalism
(d) None of these

Q22: Who is studying Journalism?
(a) P
(b) Q
(c) R
(d) Cannot be determined

Direction for the questions (23/26):

P, Q, R, S, T, V and W are seven friends who left for seven different destinations: Delhi, Chennai, Hyderabad, Bangalore, Kolkata, Chandigarh and Jaipur, each one left on a different day of the week.
R left for Jaipur on Monday.
On the last day of the week, which was a Sunday, the person left for Bangalore.
T left the next day of P who left for Chandigarh and on the previous day of W.
S left for Kolkata on Friday.
Q did not leave for either Hyderabad or Bangalore and W left for Delhi.

Q23: On which day of the week did Q leave?
(a) Sunday
(b) Saturday
(c) Wednesday
(d)Data inadequate
(e) None of these

Q24: Who left for Bangalore?
(a) T
(b) P
(c) V
(d) Data inadequate
(e) None of these

Q25: On which day of the week did T leave?
(a) Tuesday
(b) Thursday
(c) Sunday
(d) Wednesday
(e) None of these

Q26: Which of the following combinations of person-place is NOT correct?
(a) R- Jaipur
(b) P- Chandigarh
(c) T- Hyderabad
(d) V-Bangalore
(e) All are correct

Section-3 (Verbal Aptitude)-No of question-14, marks-3.5

Direction for the questions (27/31) FILL IN THE BLANKS

Q27.India's largest bank, the State Bank of India, has managed to merge five of its associate banks _____ the newly formed Bharatiya Mahila Bank.
(a) Beside   (b) Besides   (c) by   (d) before

Q28.The government's resolve is _____ to be tested as it sets about the process of consolidation in the Indian banking sector.
(a) like   (b) unlike   (c) likely   (d) unlikely

Q29.After the latest merger, the SBI _____ 45 in the list of the top global banks in terms of assets.
(a) rank   (b) ranking   (c) ranks   (d) had ranked

Q30.India is the only country to _____ experimented with the electronic voting machine on a vast scale.
(a) had   (b) have   (c) has   (d) having

Q31. A unique aspect of the Indian EVM is that it is not connected _____ the Internet, therefore not easy to access for tampering.
(a) with   (b) for   (c) by   (d) to

Q32. Reactivating deals that were put on hold may be unwise in some industries <u>where fundamental changes during the crisis have weakened the competitive position of deal targets or</u> hurt the structural attractiveness of their markets

A. where fundamental changes during the crisis have weakened the competitive position of deal targets or

B. in which fundamental changes during the crisis has weakened the competitive position of deal targets and

C. where fundamental changes during the crisis have weakened the competitive position of deal targets or

D. in which fundamental changes during the crisis have weakened the competitive position of deal targets or

E. where fundamental changes during the time of the crisis have weakened the competitive position of targets of the deal and

Q33. A new breed of investor, among private equity firms, hedge funds, and activist shareholders, <u>is aggressively looking for opportunities to create value from portfolio</u> moves in companies the older investors regard as too passive.

A. is aggressively looking for opportunities for creating value from portfolio moves in companies that the older investors regard as too passive.

B. is aggressively looking for opportunities to create value from portfolio moves in companies that the older investors regard as too passive.

C. is aggressively looking for opportunities to create value from portfolio moves in companies the older investors consider as too passive.

D. are aggressively looking for opportunities to create value from portfolio moves in companies the older investors regard to be too passive.

E. are aggressively looking for opportunities at creating value from portfolio moves in companies that the older investors regard as too passive.

Q34. A group of students in an Indian village <u>has been selected for testing a new low-cost electronic notepad being built around a new class of green, power-stingy microchips</u> that use a fraction of the electricity of current computer chips

A. has been selected for testing a new low-cost electronic notepad being built around a new class of green, power-stingy microchips that use a fraction of the electricity of current computer chips

B. have been selected to test a new low-cost electronic notepad being built around a new class of green, power-stingy microchips that use a fraction of the electricity used by current computer chips

C. has been selected to test a new low-cost electronic notepad to be built on a new class of green microchips, which are also power-stingy and which use a fraction of the electricity used by current computer chips

D. have been selected for testing a new low-cost electronic notepad being built around a new class of green, power-stingy microchips that use a fraction of the electricity of current computer chips

E. has been selected to test a new low-cost electronic notepad being built around a new class of green, power-stingy microchips that use a fraction of the electricity used by current computer chips

Q35. The National Commission on Fiscal Responsibility and Reform <u>are a bipartisan panel</u> <u>created for finding ways to reduce</u> the mounting federal debt.
A. are a bipartisan panel created for finding ways to reduce
B. is a bipartisan panel created for finding ways for reducing
C. are a bipartisan panel created to find ways of reducing
D. is a bipartisan panel created to find ways for reducing
E. is a bipartisan panel created to find ways to reduce

Direction for the questions (36/40) READING COMPREHENSION

Passage 1

Archaeology as a profession faces two major problems. First, it is the poorest of the poor. Only paltry sums are available for excavating and even less is available for publishing the results and preserving the sites once excavated. Yet archaeologists deal with priceless objects every day. Second, there is the problem of illegal excavation, resulting in museum-quality pieces being sold to the highest bidder.

I would like to make an outrageous suggestion that would at one stroke provide funds for archaeology and reduce the amount of illegal digging. I would propose that scientific archeological expeditions and governmental authorities sell excavated artifacts on the open market. Such sales would provide substantial funds for the excavation and preservation of archaeological sites and the publication of results. At the same time, they would break the illegal excavator's grip on the market, thereby decreasing the inducement to engage in illegal activities.

You might object that professionals excavate to acquire knowledge, not money. Moreover, ancient artifacts are part of our global cultural heritage, which should be available for all to appreciate, not sold to the highest bidder. I agree. Sell nothing that has unique artistic merit or scientific value. But, you might reply everything that comes out of the ground has scientific value. Here we part company. Theoretically, you may be correct in claiming that every artifact has potential scientific value. Practically, you are wrong.

I refer to the thousands of pottery vessels and ancient lamps that are essentially duplicates of one another. In one small excavation in Cyprus, archaeologists recently uncovered 2,000 virtually indistinguishable small jugs in a single courtyard, Even precious royal seal impressions known as *l'melekh* handles have been found in abundance—more than 4,000 examples so far.

The basements of museums are simply not large enough to store the artifacts that are likely to be discovered in the future. There is not enough money even to catalogue the finds; as a result, they cannot be found again and become as inaccessible as if they had never been discovered. Indeed, with the help of a computer, sold artifacts could be more accessible than are the pieces stored in bulging museum basements. Prior to sale, each could be photographed and the list of the purchasers could be maintained on the computer. A purchaser could even be required to agree to return the piece if it should become needed for scientific purposes.

It would be unrealistic to suggest that illegal digging would stop if artifacts were sold on the open market. But the demand for the clandestine product would be substantially reduced. Who would want an unmarked pot when another was available whose provenance was known, and that was dated stratigraphically by the professional archaeologist who excavated it?

Q36.The primary purpose of the passage is to propose
    (A) an alternative to museum display of artifacts
    (B) a way to curb illegal digging while benefiting the archaeological profession
    (C) a way to distinguish artifacts with scientific value from those that have no such value
    (D) the governmental regulation of archaeological sites
    (E) a new system for cataloguing duplicate artifacts

Q37.The author implies that all of the following statements about duplicate artifacts are true EXCEPT:
  (A) A market for such artifacts already exists.
  (B) Such artifacts seldom have scientific value.
  (C) There is likely to be a continuing supply of such artifacts.
  (D) Museums are well supplied with examples of such artifacts.
  (E) Such artifacts frequently exceed in quality those already catalogued in museum collections.

Q38.Which of the following is mentioned in the passage as a disadvantage of storing artifacts in museum basements?
  (A) Museum officials rarely allow scholars access to such artifacts.
  (B) Space that could be better used for display is taken up for storage.
  (C) Artifacts discovered in one excavation often become separated from each other.
  (D) Such artifacts are often damaged by variations in temperature and humidity.
  (E) Such artifacts' often remain uncatalogued and thus cannot be located once they are put in storage.

Q39.The author mentions the excavation in Cyprus to emphasize which of the following points?
  (A) Ancient lamps and pottery vessels are less valuable, although more rare, than royal seal impressions.
  (B) Artifacts that are very similar to each other present cataloguing difficulties to archaeologists.
  (C) Artifacts that are not uniquely valuable, and therefore could be sold, are available in large quantities.
  (D) Cyprus is the most important location for unearthing large quantities of salable artifacts.
  (E) Illegal sales of duplicate artifacts are wide-spread, particularly on the island of Cyprus.

Q40.The author's argument concerning the effect of the official sale of duplicate artifacts on illegal excavation is based on which of the following assumptions?
  (A) Prospective purchasers would prefer to buy authenticated artifacts.
  (B) The price of illegally excavated artifacts would rise.
  (C) Computers could be used to trace sold artifacts.
  (D) Illegal excavators would be forced to sell only duplicate artifacts.
  (E) Money gained from selling authenticated artifacts could be used to investigate and prosecute illegal excavators.

Term-I, Examination 2017-18

B. Tech – Year III (CSE), Semester – VI

Industrial Management
Allotted Time: 90 Minutes

Code: MBA 5034
Max Marks: 20

Instructions:

I. All Questions of section must be attempted at one place in a proper sequence.

II. Answers should be supplemented with well leveled diagrams and adequate justification with examples.

Section: A

Note: Attempt All Questions   **1 X 5= 5 Marks**

I. Who Propounded "POCOC" Acronym?

II. Write any two Managerial Functions.

III. Define Coordinating.

IV. Briefly explain Motivation.

V. Explain Valence as per Expectancy theory of Motivation.

Section –B

Note: Attempt Any Three Questions   **3 X 2 = 6 Marks**

I. Explain motivation with respect to Hertzberg theory of motivation.

II. Define Leadership. Discuss Autocratic and Free Rein style of Leadership.

III. Explain staffing function of a management and outline staffing process.

IV. How POSDCORB Acronym is a key determinant in defining management functions?

Section – C

Note: Attempt Any Three Questions   **3 X 3 = 9 Marks**

I. "Hygiene factors do not affect the Motivation level thus productivity and desired output remain unaffected" Do you agree with the statement? Justify.

II. Discuss Line and Staff & Functional organizations. Discuss significance of informal and formal groups in the organization.

III. Discuss Performance Appraisal with MBO approach. Write a brief account of Paired comparison analysis and 360 degree performance appraisal.

IV. "Define Controlling". Outline the process of Controlling.

Even Semester, I- Mid Term Examination, 2017-18
B. Tech., III-Year, VI-Semester
Compiler Design (CSE 6001)

Time: 1.5 Hrs.   **Total Marks: 20**
Notes:

1. All parts of a question should be answered at one place.
2. Answer should be brief and to-the-point and be supplemented with neat sketches.
3. Any missing or wrong data may be assumed suitably giving proper justification.
4. Figures on the right-hand side margin indicate full marks.

Section A

Note: Attempt All Questions   **(1x5=5)**

I. The number of tokens in the following C statement is
   printf("i = %d, &i = %x", i, &i);

II. Write the name of derivations, a top-down parser use while parsing an input string, the input is assumed to be scanned in left to right order.

III. Which of the following statements is false and why?
   (a) An unambiguous grammar has same leftmost and rightmost derivation.
   (b) An LL (1) parser is a top-down parser.
   (c) An ambiguous grammar can never be LR (k) for any k.

IV. Which of the following suffices to convert an arbitrary CFG to an LL (1) grammar and why?
   (a) Removing left recursion alone
   (b) Factoring the grammar alone
   (c) Removing left recursion and factoring the grammar
   (d) None of the above

V. Write the name of machine independent phases of the compiler.

Section B

I.   What do you mean by FIRST and FOLLOW? Calculate the FIRST and FOLLOW for the following grammar
     S-> 1AB | ε   A->1AC | 0C   B-> 0S   C->1

II. Construct the predictive parser for the following grammar
     S -> (L) | a   L ->L,S | S

III. What is operator grammar? How G: S->a | ^ | (T)   T->T,S | S can be parsed through operator precedence parser.

IV. Prove that the given grammar is ambiguous and eliminate ambiguity in it. G: S->iEtSeS | iEtS | a, E->b |c | d

Section C

I.   What is bootstrapping and cross compiler? Explain all the phases of the compiler in brief.

II. Construct the collection of LR(0) item sets and Design the SLR for the grammar S -> S,S | a | ε. Indicate the conflicts (if any) in the various states of the SLR parser.

III. Design the DFA for the regular expression (ab +ba)*aba using Optimization of DFA-Based Pattern Matchers.

IV. For the following grammar
     D -> T L;
     L -> L, id | id
     T -> int | float
     (a) Remove left recursion (if required)
     (b) Find first and follow for each non terminal for Resultant grammar
     (c) Construct LL (1) parsing table

I Mid-Term Examination, 2017-18

Optimization Techniques   **(CSE - 6002)**

Time: - 90 Minutes   **Max. Marks:-20**

Section – A

Note: Attempt All Questions.   **(1 × 5 = 05 Marks)**

Q.1 Define degenerate solutions.

Q.2 Find the dual of the following problem.

$Min\, Z = 3x_1 + x_2,\ s.t.\ 2x_1 + 3x_2 \geq 2,\ x_1 + x_2 \geq 1, x_1, x_2 \geq 0$

Q.3 Solve the following LPP graphically.

$Max\, Z = 3x_1 + 4x_2,\ s.t.\ x_1 + 2x_2 \leq 5,\ x_1 + x_2 \leq 4, x_1, x_2 \geq 0$

Q.4 Define the following terms:

(i) Slack variable   (ii) Surplus variable.

Q.5 Write the condition for no solution in big M method.

Section – B

Note: Attempt Any three questions.   **(2 × 3 = 06 Marks)**

Q1. A manufacturer of a line of patient medicines is preparing a production plan on medicines A and B. There are sufficient ingredients available to make 20,000 bottles of A and 40,000 bottles of B but there are only 45,000 bottles into which either of the medicines can be put. Further, more it takes 3 hours to prepare enough material to fill 1,000 bottles of A it takes one hour to prepare enough material to fill 1,000 bottles of B and there are 66 hours

available for this operation. The profit is Rs. 8/- per bottle of A and Rs. 7/- per bottle of B. Formulate this problem as a Linear Programming Problem.

Q.2. Solve the following LPP by dual simplex method.

$Min\ Z = 2x_1 + 2x_2 + 4x_3$

$s.t.\ 2x_1 + 3x_2 + 5x_3 \geq 2,\ 3x_1 + x_2 + 7x_3 \leq 3,\ x_1, x_2, x_3 \geq 0$

Q.3. Solve the following LPP by simplex method:

$Max\ Z = 2x_1 + 3x_2 + 10x_3\ s.t.\ x_1 + 2x_3 = 0,\ x_2 + x_3 = 1,\ x_1, x_2, x_3 \geq 0$

Q.4. Explain Branch and Bound method for Integer solution of LPP.

Section – C

Note: Attempt Any three questions.　　　　$(3 \times 3 = 09\ \textbf{Marks})$

Q.1 For Linear Programming Problem.

$Max\ Z = 5x_1 + 3x_2\ s.t.\ 3x_1 + 5x_2 \leq 15,\ 5x_1 + 2x_2 \leq 10,\ x_1, x_2 \geq 0$

Find the variation in c_1 without changing the optimality of the solution.

Q.2 Write dual of the following problem.

$Min\ Z = 2x_2 + 5x_3,\ s.t.\ x_1 + x_2 \geq 2,$

$2x_1 + x_2 + 6x_3 \leq 6,\ x_1 - x_2 + 3x_3 = 4,\ x_1, x_2, x_3 \geq 0$

Q.3 Use two phase method to solve the following LPP:

$Max\ Z = 10x_1 + 20x_2\ s.t.\ 2x_1 + 5x_2 \geq 50,\ 4x_1 + x_2 \leq 28,\ x_1, x_2 \geq 0$

Q.4. Find the integer solution to the following LPP by cutting plane method:

$Max\ Z = 4x_1 + 3x_2\ s.t.\ x_1 + 2x_2 \leq 4,\ 2x_1 + x_2 \leq 6,\ x_1, x_2 \geq 0.$

First Term Examination, 2017-18

Course: B.Tech   Year: III   Semester: VI

SoftComputing

(CSE-6004)

Uni. Roll No: ....

Time: 1.5 Hrs.   **Total Marks: 20**

Notes:

1. All parts of a question should be answered at one place.
2. Answer should be brief and to-the-point and be supplemented with neat sketches.
3. Any missing or wrong data may be assumed suitably giving proper justification.
4. Figures on the right-hand side margin indicate full marks.

Section A

Note: Attempt All Questions   **(1x5=5)**

I.   Distinguish between Soft computing and Hard Computing.

II.   Discuss analogy between biological and Artificial Neural Network.

III. What is the appropriate choice for the learning rate η in back propagation Algorithm and Why?

IV.   A 4 - input neuron has weights 1,2,3 and 4. The transfer function is linear with the constant of proportionality being equal to 2. The inputs are 4, 10, 5 and 20 respectively. What will the output be?

V.   With a supervised learning algorithm, we can specify target output values but we may never get close to those targets at end of learning, give two reasons why this might happen.

Section B

Note: Attempt any Three Questions   **(2x3=6)**

1.   What are Neural Networks? Discuss the applications of neural networks in vision and speech.

II. What are linearly inseparable problems? What kind of perceptron is required to handle such problems? Describe a training algorithm for such a perception.
III. Draw and explain the block diagram representation of associative memories and explain why they are needed.
IV. Distinguish between a feedforward network and a recurrent network. A fully connected feedforward network has 10 source nodes, 2 hidden layers, one with 4 neurons and the other with 3 neurons and a single output neuron. Construct a neat architectural graph of network.

Section C

I. Draw a flow chart for "Error Back Propagation Training Algorithm" for two-layer network.
II. Draw the architecture of simple perceptron network. Explain briefly perceptron learning algorithm and develop a perceptron network to implement AND function.
III. Use backpropagation network given below to find new weights, when the input pattern presented is [0.6 0.8 0] and the target output is 0.9. Try learning rate as 0.2 and use the binary sigmoidal activation function.
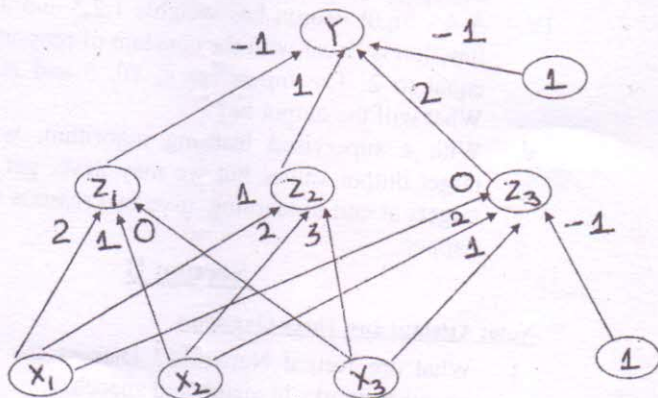
IV. Realize a neural network using BPN algorithm for XOR gate. Use the initial weights and biases as given in the architecture.

First Term Examination, 2017-18

Course: BTech   Year: III   Semester: VI
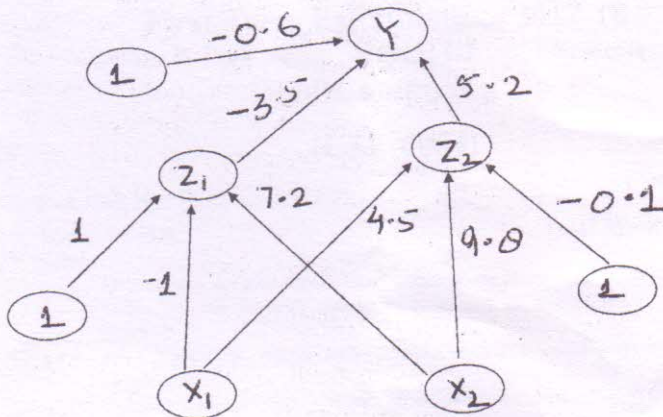
Big Data and Analytics (CSE6005)

Uni. Roll No: ....

Time: 1.5 Hrs.   Total Marks: 20

Notes:
1. All parts of a question should be answered at one place.
2. Answer should be brief and to-the-point and be supplemented with neat sketches.
3. Any missing or wrong data may be assumed suitably giving proper justification.
4. Figures on the right-hand side margin indicate full marks.

Section A

Note: Attempt All Questions   (1x5=5)

I.   What is Data science? Differentiate between data and information.

II.   You have just got a book issued from library. What are the details about the book that can be placed in University Library Management System? What type of data is this?

III.   Spikes in data refer to which characteristics of data? Explain it briefly with the help of suitable example?

IV.   Replication causes data redundancy and consumes a lot of space, then why is it pursued in HDFS? Justify it.

V.   Is Namenode machine same as DataNode machine as in terms of hardware?

Section B

I. Write HDFS commands for following:
   a) To get list of directories and files.
   b) To create a directory in HDFS.
   c) To display the contents of an HDFS file (mtcars.txt) on console.
   d) To remove a directory from HDFS.

II. What are the two files associated with metadata present in NameNode? What do you mean by meta data in HDFS? List and define the other files associated with metadata in HDFS.

III. Why consistency in CAP theorem is usually compromised? Enlist at least two products where consistency is not compromised and where it is compromised.

IV. What are different types of NoSQL databases? Elucidate the key difference among replication, auto-sharding and sharding?

Section C

I. What is the difference between a standby NameNodes and a secondary NameNode? How data or a file is written into HDFS? Why is data block size set to 128 MB in Hadoop?

II. Discuss HDFS architecture? What is a rack awareness algorithm and why is it used in Hadoop?

III. What is NewSQL? What are the characteristics of NewSQL? How it is different from NoSQL and SQL?

IV. Explain the classifications of analytics. Discuss the study of various approaches to analysis of data and what it leads to?