

STUDENT'S ENROLMENT NUMBER \_\_\_\_\_

**ITM (SLS) BARODA UNIVERSITY  
SCHOOL OF COMPUTER SCIENCE, ENGINEERING AND TECHNOLOGY (SOCSET)**

**B. TECH CSE/IT//AI/DS ODD SEMESTER 2023-24**

**CONTINUOUS EVALUATION TEST (CET)-2**

**SEMESTER:7**

**COURSE-CODE: C2720C2**

**COURSE-NAME: DEEP LEARNING**

**DATE:25/9/2023**

**MARKS: 30**

**TIME: 10:30 AM to 12:00 PM**

Instructions:

- All questions are mandatory. There are no external options.
- Make suitable assumptions, wherever necessary, and state them clearly.
- Use of Non-Programmable Calculator is allowed/Not allowed.
- Figures to the right indicate maximum marks.

Q1.

[6]

1. In CNNs, which operation allows for parameter sharing?  
a) Fully connected layers  
b) Pooling layers  
☒ c) Convolutional layers  
d) Activation layers
2. Regularization methods like L1 and L2 are used to:  
a) Increase model complexity  
☒ b) Reduce model complexity  
c) Enhance model accuracy  
d) Decrease model interpretability
3. In a Bidirectional RNN (Bi-RNN), what is the primary advantage of processing input sequences in both forward and backward directions?  
a) It reduces the computational complexity of the network.  
b) It allows the network to process sequences in parallel.  
☒ c) It captures context from both preceding and following elements.  
d) It prevents overfitting in the model
4. What is a limitation of undercomplete autoencoders?  
a) They are computationally expensive to train  
☒ b) They may struggle to capture complex data patterns  
c) They always result in overfitting  
d) They require a large amount of labelled data
5. Which of the following is a common regularization technique applied to prevent overfitting in autoencoder models?  
a) Data augmentation

- ~~b)~~ Weight initialization
- ~~c)~~ Dropout
- d) Batch normalization

6. How can the challenges in training Boltzmann Machines (BM) be mitigated?
- a) By using a larger number of hidden units
  - ~~b)~~ By using a smaller number of hidden units
  - c) By increasing the learning rate
  - d) By using dropout regularization

Q3. Answer any Two (out of Four) [6]

- ~~1.~~ Write Short note on DenseNet.
- ~~2.~~ In Deep Learning, where we can use Transfer Learning approach?
- ~~3.~~ Draw architecture of Bi-directional RNN and explain in detail.
- 4. What are the fundamental principles of Boltzmann Machines (BM)?

Q3. Answer any Two (out of Four) [6]

- ~~1.~~ Short note PixelNet.
- ~~2.~~ What are the Transfer Learning Techniques?
- ~~3.~~ How DenseNet is good compare to CNN?
- ~~4.~~ Explain the concept of regularized autoencoders.

Q4. Answer any Two (out of Four) [6]

- ~~1.~~ What is called Sequence Modelling in Deep Learning?
- ~~2.~~ Provide an overview of Long Short-Term Memory (LSTM) networks.
- ~~3.~~ Short note Undercomplete Encoder.
- ~~4.~~ Difference: Recurrent Neural Networks and Recursive Neural Networks.

Q5. Answer any Two (out of Four) [6]

- ~~1.~~ Describe the architecture of Bi-directional RNN, how does it work?
- ~~2.~~ Explain the concept of Backpropagation Through Time (BPTT) in the context of training recurrent neural networks.
- ~~3.~~ Write Short Note on Stochastic Encoders and Decoders.
- ~~4.~~ Explain concept of Parameter Sharing in Deep Learning.

Enrolment No:

Roll No:

**ITM (SLS) Baroda University, Vadodara**  
**B.Tech-CSE,CSE-IT,AI: Semester VII (School of Computer Science, Engineering and Technology)**  
**CET-2**

**Subject Name: Compiler Design**

**Subject Code: C2710C2**

**Date: 26/9/2023**

**Time: 10:30-12:00**

**Maximum Marks: 30**

Q.1.	MCQ	[6]
(a)	Which of the following concept of FSA is used in the compiler? a) Code optimization b) Code generation c) Lexical analysis d) Parser	
(b)	What is CFG? a) Regular Expression b) Compiler c) Language expression d) All of the mentioned	
(c)	Which of the following error can Compiler diagnose? a) Logical errors only b) Grammatical and logical errors c) Grammatical errors only d) All of the mentioned	
(d)	Characters are grouped into tokens in which of the following phase of the compiler design? a) Code generator b) Lexical analyzer c) Parser d) Code optimization	
(e)	Which of the following can detect an error if a programmer by mistake writes multiplication instead of division? a) Interpreter b) Compiler or interpreter test c) Compiler d) None of the mentioned	
(f)	The output of the lexical and syntax analyzer can stated as: a) parse stream, parse tree b) token tree, parse tree c) token stream, parse tree d) all of the mentioned	
Q.2.	<b>ATTEMPT ANY TWO OUT OF FOUR</b>	[06]
(a)	Draw the DFA for the regular expression $(a b)^*abb$ using set construction method only.	
(b)	How to convert regular expression to automata? Explain with example.	



(c)	Write down pseudo code for simulating DFA. e.g. $(a b)^*abb$	
(d)	How can we represent NFA in transition table?	
<b>Q.3. ATTEMPT ANY TWO OUT OF FOUR</b>		
(a)	Draw NFA from regular expression using Thomson's construction and convert it into DFA. $(a   b)^* a b^*$	[06]
(b)	Explain symbol table. For what purpose, compiler uses symbol table? Explain with C program instructions.	
(c)	What are conflicts in LR Parser? What are their types? Explain with an example.	
(d)	Differentiate between Context-Free Grammars and Regular Expressions.	
<b>Q.4. ATTEMPT ANY ONE OUT OF TWO</b>		
(a)	Write down the Algorithm for eliminating left recursion.	[06]
(b)	How can we use Reductions techniques for "bottom-up parsing"?	
<b>Q.5. ATTEMPT ANY TWO out of FOUR</b>		
(a)	Differentiate between top down parser and bottom up parser.	[06]
(b)	Draw the "Annotated parse tree" for the expression: $3 * 5 + 4 n$ .	
(c)	Draw the "Annotated parse tree and three address code for $c + a[i] [j]$ ".	
(d)	Explain the techniques of the "Parser Generator Yacc".	

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