Enrolment No._____

HASMUKH GOSWAMI COLLEGE OF ENGINEERING, VAHELAL

MID SEMESTER EXAMINATION, SEPTEMBER-2016

Subject Code: 2150708 **Date: 26/09/2016**

Subject Name: SP **Sem: 5TH**

Time: 10:00 TO 10:50 **Total Marks: 20**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

QUE.1 **(A)** Define following terms **3**

1) Intermediate Representation 2) Language Processor 3)Semantic gap

(B) What is grammar? Explain types of Grammar. **3**

QUE.2 **(A)** Build a DFA for following regular expression. **3**

(a | b)*aab#

(B) Given a grammar **4**

S→XS | dS | ε

X→Y | Zb | aY

Y→cZ

Z→e

Develop an LL(1) parsing table

OR

(B) Construct operator precedence parser for following grammar : **4**

E - > E+E | E*E | id

Check whether the string id + id * id is accepted or not?

QUE.3 **(A)** Explain various optimizing transformations of a compiler by giving suitable examples. **3**

(B) Consider following assembly program. Show **4**

(i) Contents of Symbol Table

(ii) intermediate codes using Variant I representation

```
START 100
READ A
READ B
READ C
MOVER AREG, A
ADD AREG, B
ADD AREG, C
MULT AREG, C
MOVEM AREG, RESULT
PRINT RESULT
STOP
A DS 1
B DS 1
```

C DS 1
RESULT DS 1
END

Instruction opcodes:
READ – 09, MOVER – 04, MOVEM – 05, ADD – 01, MULT – 03, PRINT – 10, STOP – 00
Assembler-directive codes: START – 01, END - 02
Register code: AREG – 01

OR

(A) What are advanced assembler directives? Explain any three in detail. **3**

(B) Write Three address codes and triple representation for **4**
X = -a * b + -a * b

********** ALL THE BEST **********