NAME: KRUNAL RANK

ROLL NO: U18C0081

CLASS: BTECH III, Computer Eng.

SEM: Semester 6

System Softwares
Tutorial 4

Ans 1: Forward Reference is when we use the symbol or literal before declaring it and the error caused due to it is called the forward reference problem.

Backpatching usually refers to the process of resolving forward branches that have been planted in the code, e.g. at if statements, when the value of the target becomes known, e.g., when the closing brace or matching else is encountered.

Ans 2: Assembly Pseudo Directives are instructions used by the assembler to help automate the assembly process and to improve program readibility.
Some of the advanced assembly directives are:-

- EQV :- The equate directive is used to substitute values for symbols or labels.
Example:-

label EQV value

Whenever label is encountered, it is replaced with value.

- ORG :- The origin directive sets the location counter to value specified.
Example:-

ORG $2000

Here, location counter * is set to address 2000.

Ans 3

Ans 3, Intermediate Code can be represented in two ways:

- High level Intermediate code:-
High level intermediate code can be represented as source code. To enhance the performance of source code, we can easily apply code modification. But to optimize target machine, it is less preferred.

- Low level Intermediate code:-
Low level intermediate code is close to the target machine, which makes it suitable for register & memory allocation etc.. It is ~~~~ used for machine dependent optimizations.

Ans 4, In variant 1 Intermediate code, the first operand in a single digit number that usually represent a register code. In some cases, the register code is replaced by a condition code. The second operand is always a memory operand.

In Variant 2 Intermediate code, their processed forms may at times take the place of the operand fields of the source statements.

Ans 5:

	Variant 1	Variant 2
1.	Extra work is required in pass 1.	Pass 1 performs simple task.
2.	IR is very much compact.	IR is not compact.
3.	Pass 2 per forms simple task.	Pass 2 requires extra work
4.	Wastage of memory takes place.	Memory ~~saves~~ gets saved