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Question No: 1 (Marks: 1) - Please choose one
If r1 = (aa + bb) and r2 = (a + b) then the language (aa + bb)(a + b) will be generated by

- **(r1)(r2) (Page 10)**
- (r1 + r2)
- (r2)(r1)
- (r1)*

Question No: 2 (Marks: 1) - Please choose one
"One language can be expressed by more than one FA". This statement is _____

- **True (Page 14)**
- False
- Some times true & sometimes false
- None of these

Question No: 3 (Marks: 1) - Please choose one
Who did not invent the Turing machine?

- Alan Turing
- **A. M. Turing (Page 140)**
- Turing
- None of these

Question No: 4 (Marks: 1) - Please choose one
Which statement is true?

- **The tape of turing machine is infinite. (Page 140)**
- The tape of turing machine is finite.
- The tape of turing machine is infinite when the language is regular
- The tape of turing machine is finite when the language is nonregular.

Question No: 5 (Marks: 1) - Please choose one
A regular language:

- **Must be finite (Page 11)**
- Must be infinite
- Can be finite or infinite
- Must be finite and cannot be infinite

عقل مند کہتا ہے میں کچھ نہیں جانتا جبکہ بے وقوف کہتا ہے کہ میں سب کچھ جانتا ہوں

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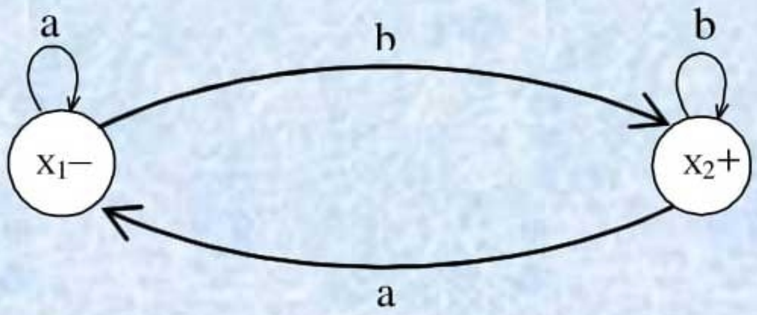
Question No: 6 (Marks: 1) - Please choose one

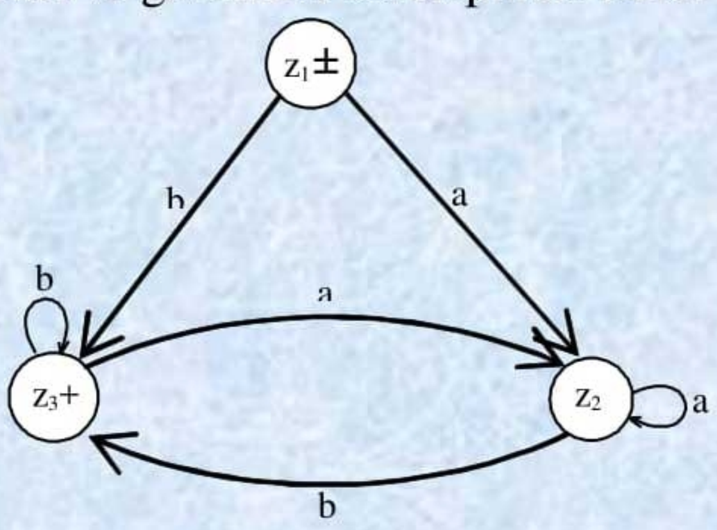
Every regular expression can be expressed as CFG but every CFG cannot be expressed as a regular expression. This statement is:

- Depends on the language
- None of the given options
- **True (Page 97)**
- False

Question No: 7 (Marks: 1) - Please choose one



Above given FA corresponds RE r. then FA corresponding to r* will be



This statement is

- **True (Page 38)**
- False
- Depends on language
- None of these

Question No: 8 (Marks: 1) - Please choose one

Consider the language L of strings, defined over $\Sigma = \{a,b\}$, ending in a

- **There are finite many classes generated by L, so L is regular (Page 76)**
- There are infinite many classes generated by L, so L is regular
- There are finite many classes generated by L, so L is non-regular
- There are infinite many classes generated by L, so L is non-regular

خود کو تمھیں سے بڑھ کر کوئی اچھا مشورہ نہیں دے سکتا

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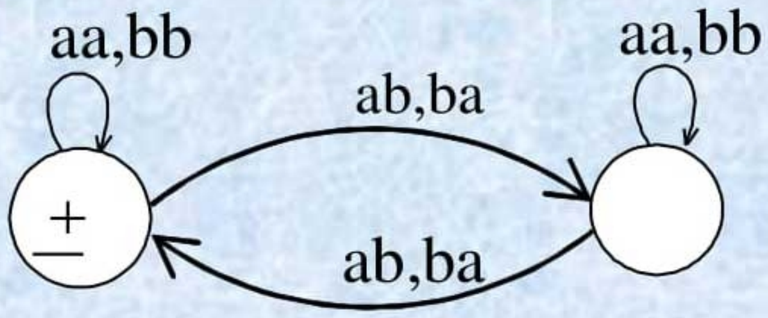
Question No: 9 (Marks: 1) - Please choose one



Above given TG has _____ RE.

- (aa+aa+(ab+ab)(aa+ab)*(ab+ba))*
- **(aa+bb+(ab+ba)(aa+bb)*(ab+ba))* (Page 22)**
- (aa+bb+(ab+ba)(aa+bb)(ab+ba))*
- None of these

Question No: 10 (Marks: 1) - Please choose one

The word 'formal' in formal languages means

- The symbols used have well defined meaning
- They are unnecessary, in reality
- **Only the form of the string of symbols is significant** Click here for detail
- None of these

Question No: 11 (Marks: 1) - Please choose one

Let A = {0, 1}. The number of possible strings of length 'n' that can be formed by the elements of the set A is

- n!
- n^2
- n^m
- **2^n**

Question No: 12 (Marks: 1) - Please choose one

Choose the correct statement.

- A Mealy machine generates no language as such
- A Moore machine generates no language as such
- A Mealy machine has no terminal state
- **All of these** click here for detail

Question No: 13 (Marks: 1) - Please choose one

TM is more powerful than FSM because

- The tape movement is confined to one direction
- It has no finite state control
- **It has the capability to remember arbitrary long sequences of input symbols** Click here for detail
- None of these

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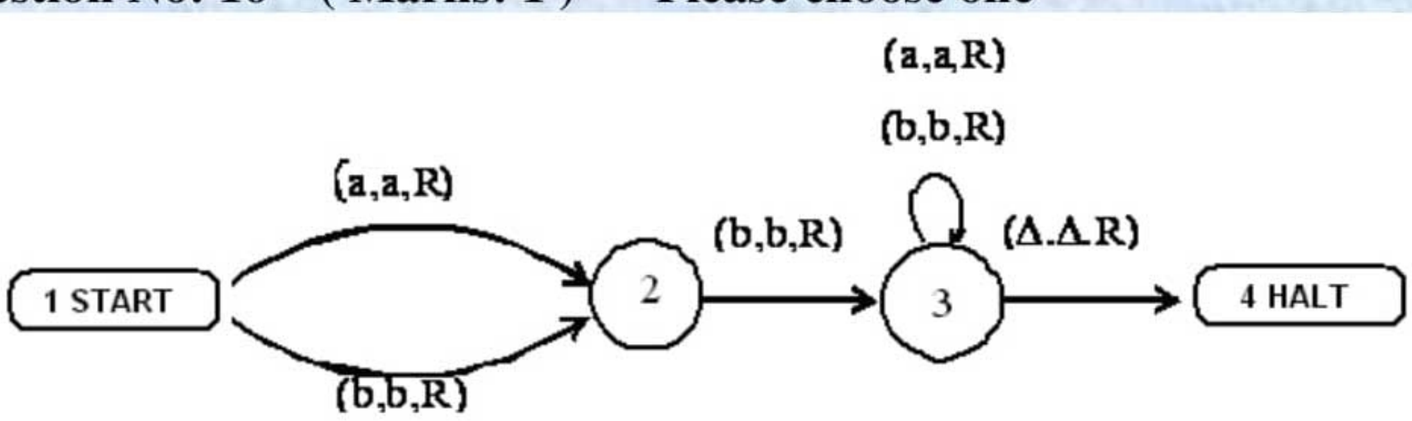
Question No: 14 (Marks: 1) - Please choose one
If L1 and L2 are expressed by regular expressions r1 and r2, respectively then the language expressed by r1 + r2 will be _____

- **Regular (Page 10)**
- Ir-regular
- Can't be decided
- Another Language which is not listed here

Question No: 15 (Marks: 1) - Please choose one
Like TG, a PDA can also be non-deterministic

- **True (Page 111)**
- False

Question No: 16 (Marks: 1) - Please choose one



The above machine is a/an _____

- Finite Automata
- **Turing machine (Page 141) rep**
- FA
- TG

Question No: 17 (Marks: 1) - Please choose one
The language of all words (made up of a's and b's) with at least two a's can not be described by the regular expression.

- a(a+b)*a(a+b)*(a+b)*ab*
- (a+b)* ab* a(a+b)*
- b*ab* a(a+b)*
- **none of these**

a^nb^n {where n>0} is the language will at least one a and b and cannot be described by RE.

Question No: 18 (Marks: 1) - Please choose one
In FA, if one enters in a specific state but there is no way to leave it, then that specific state is called

- Dead State
- Waste Basket
- Davey John Locker
- **All of these (Page 17)**

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Question No: 19 (Marks: 1) - Please choose one
If L is a regular language then, L^c is also a _____ language.

► **Regular (Page 66) rep**
► Non-regular
► Regular but finite
► None of the given

Question No: 20 (Marks: 1) - Please choose one
In CFG, the symbols that can't be replaced by anything are called___

► **Terminal (Page 87) rep**
► Non-Terminal
► Production
► All of given

Question No: 21 (Marks: 1) - Please choose one
Which of the following is NOT a regular language?

► String of 0's whose length is a perfect squere
► Set of all palindromes made up of 0's and 1's
► String of 0's whose length is a prime number
► **All of the given options** Click here for detail

Question No: 22 (Marks: 1) - Please choose one
Choose the incorrect (FALSE) statement.

► A Mealy machine generates no language as such
► A Mealy machine has no terminal state
► **For a given input string, length of the output string generated by a Moore machine is not more than the length of the output string generated by that of a Mealy machine** click here for detail
► All of these

Question No: 23 (Marks: 1) - Please choose one
Pumping lemma is generally used to prove that:

► A given language is infinite
► **A given language is not regular** Click here for detail **rep**
► Whether two given regular expressions of a regular language are equivalent or not
► None of these

Question No: 24 (Marks: 1) - Please choose one
Which of the following is a regular language?

► **String of odd number of zeroes** Click here for detail **rep**
► Set of all palindromes made up of 0's and 1's
► String of 0's whose length is a prime number
► All of these

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Question No: 25 (Marks: 1) - Please choose one

Choose the incorrect statement:

- ► (a+b)*aa(a+b)* generates Regular language.
- ► **A language consisting of all strings over ∑={a,b} having equal number of a's and b's is a regular language**
- ► Every language that can be expressed by FA can also be expressed by RE
- ► None of these

Question No: 26 (Marks: 1) - Please choose one

Left hand side of a production in CFG consists of:

- ► One terminal
- ► More than one terminal
- ► **One non-terminal (Page 87)**
- ► Terminals and non-terminals

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