

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.

دنیا میں سب سے مشکل کام اپنی اصلاح اور سب سے آسان کام دوسروں پر نکتہ چینی کرنا ہے

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

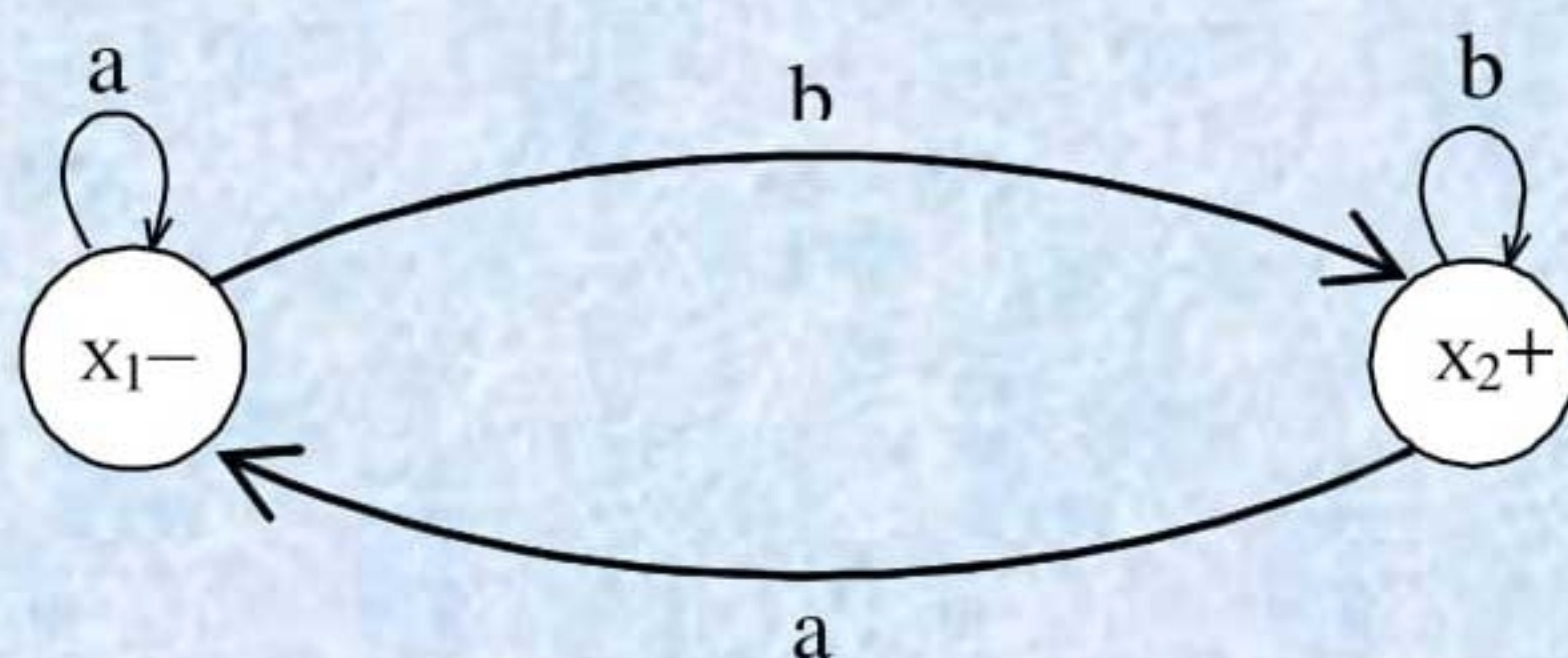
Question No: 6 (Marks: 1) - Please choose one

Every regular expression can be expressed as CFG but every CFG cannot be expressed as a regular expression.

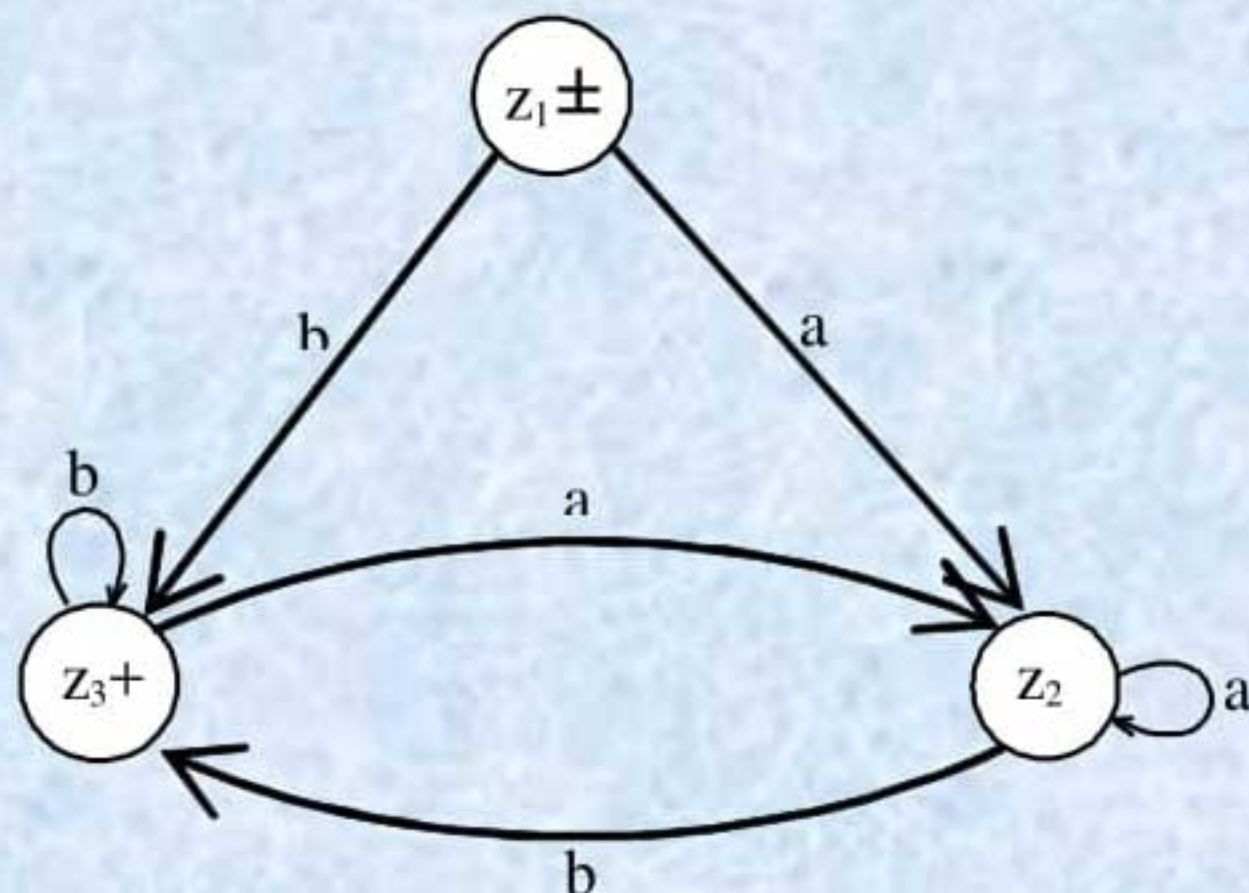
This statement is:

- ▶ 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

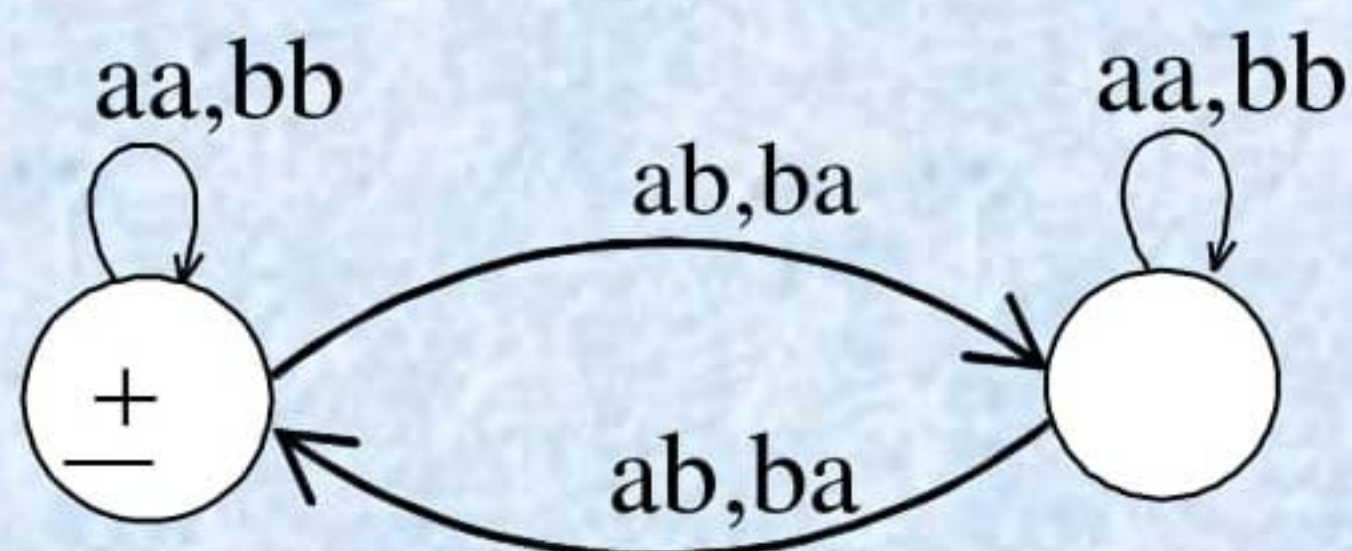
بری صحبت سے تنہائی بہتر ہے اور تنہائی سے نیک صحبت بہتر ہے

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

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](#)

اللہ کا خوف سب سے بڑی دانائی ہے

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

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 _____

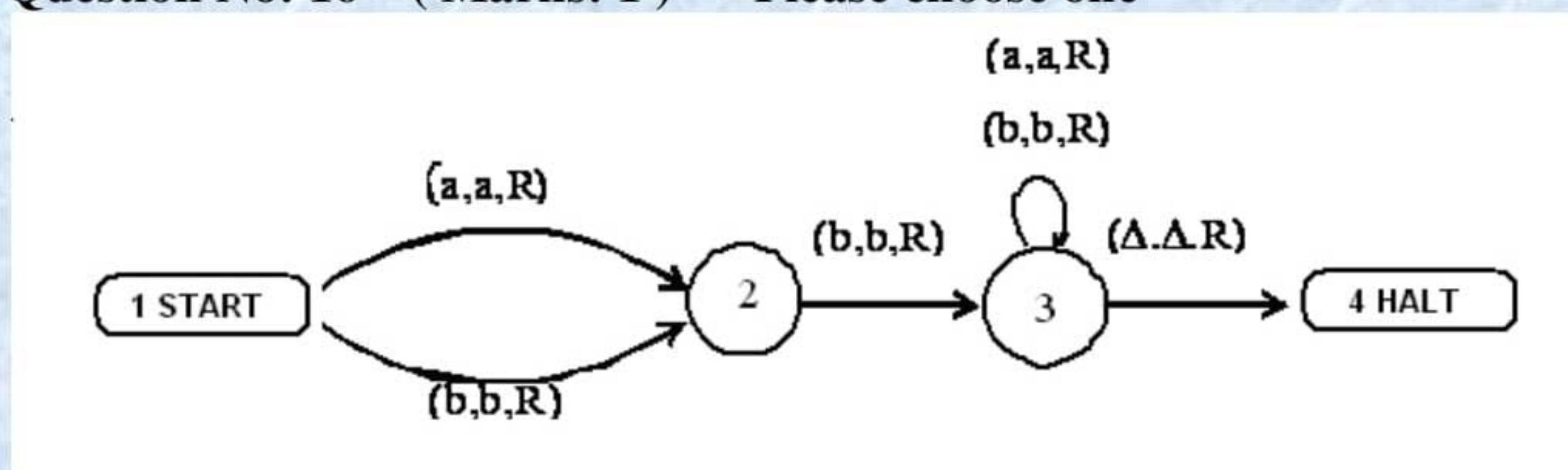
- ▶ **Regular (Page 10)**
- ▶ Ir-regular
- ▶ Can't be decided
- ▶ Another Language which is not listed here

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/anTG _____

- ▶ Finite Automata
- ▶ **Turing machine (Page 141)**
- ▶ 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**

$a^n b^n$ {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)**

Question No: 19 (Marks: 1) - Please choose one

If L is a regular language then, L^c is also a _____ language.

- ▶ **Regular (Page 66)**
- ▶ 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)**
- ▶ 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 square
- ▶ 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](#)
- ▶ Whether two given regular expressions of a regular language are equivalent or not
- ▶ None of these

دنیا کی سب سے بڑی فتح نفس پر قابو رکھنا ہے

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](#)
- ▶ 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

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 $\Sigma=\{a,b\}$ 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