1)Shell is started from Java9

<https://tryjshell.org/>

2) From JDK9,we have versions released for every 6 months and also JDK11,JDK17,JDK21 are LTS versions

3)generate JDK binaries from open-JDK and should comply with TCK i.e.,

Adoptium, amazon,OpenJDK,azul

4) use amazon corretto for 21 and use SDKMAN

curl -s "https://get.sdkman.io" | bash

sdk list java

sdk install java 21-amzn

5)use command jshell on cmd

6) goto and const are not used

7) 8 primitive and reference types

8) $ is valid variableName , but from JDK9 \_ is not a valid standard identifier

9) case-styles are camelCase,

PascalCase(first letter is also capital),

Snakecase(all small/all capital, but there shld be underscore) – used in java only for constant variables

Kebabcase – same as snake, but all shld be small and use hypen instead of underscore (css/urls scenarios).

10) boolean isMajor, hasPassport = true;

Here isMajor is false by default and hasPassport is true

11) java allows Unicode values like this char c =’\u0032’;

Char tab = ‘\t’

Empty = ‘\000’, backslash = ‘\\’;

char x = 163; - it will fetch the corresponding Unicode value x = ‘$’;

it can fetch values till upto 65365

char c = ‘\u0063’

char smiley = '\u263A'

12) All wrapper classes have a MIN\_VALUE and MAX\_VALUE i.e.

Byte. MIN\_VALUE and Byte. MAX\_VALUE

13) long numberOfTrees = 214783456718L(we can use l also)

If we don’t specify L, java will take it as int only

14) overflow and underflow, if result of arithmetic is exceeding the range of datatype used

15)by default all decimal are considered as double (15 digits precision), unless we use F suffix value (float is 7 precision)

16) float 1.5f/0.0 f = Infinity

Float 1.5f/-0.0f = -Infinity

Float 0.0f/0.0f = NaN

Float.POSITIVE\_INFINITY and Float.NEGATIVE\_INFINITY ,Float.NaN;

**17)** Only for Java 7 or above

int num = 1\_00\_0000\_00 is possible

Int num2 = 1\_\_\_00\_\_\_\_0\_\_\_0 is also allowed

Not allowed at beginning or end,adj to decimal point,prior to L/F ,not where string of digits is expected

float piValue = 3.14\_1\_59\_27f;

System.out.println(piValue);

18) octal should be like

int myOcta = 031;(embedded systems) – allows only 0 to 7(power of 8)

float myHexa = 0x453f;(for color codes, memory/address details)- allows 0 to 9 and a to f

(power of 16)

byte myBinary = 0B011;

19) Implicit casting is - converting smaller primitive to larger, automatically and safe one.

byte>short>char>int>long>float>double

Narrow casting - converting larger primitive to smaller, not safe one

ReqDataType var1 = (TargetType) var2;

double myPi = 3.14d;

int myPi = (int)myDoublePi;

20)JDK consists of JRE,compiler,interpreter,Javadoc,archiver

21) JDK-> DevTools, JRE

JRE -> JVM and libraries

22)from Java-9, JRE is not provided, to reduce duplicate files

23)Programming types – imperative ,declarative, procedural and functional

Class, object, inheritance, interface, encapsulation, polymorphism and abstraction

24) class has – fields, methods, constructors, static initializers, instance initializers

25) multiple main can be defined with multiple signatures

26) when object is instantiated in Java, JVM invokes constructor that serves purpose of initializing objects state by assigning values to declared properties and allocating memory

27) this -keyword that refers to current object instance, it can be used to refer instance variables and methods of current object

28) cons chaining

Call should be first statement

Call to same constr cant be done

Call to other constr cant be done more than once

29) 2 options to initialize objects, i.e. constructor and initialization block

IB is useful for anonymous class or duplicate code cases

30)Static block is executed only once, no matter how many times obj/inst are created

It has no return statement

Used for 1 time initialization for s.variables or when initialize logic is more complex

It executes before main method

31)Ins Int block runs everytime, when we create object using new or call to constructor

32) **Heap** – where all objects are stored

**Stack** – where all local variables & method calls are stored, when method is called new stack frame is created on stack, when method returns stack frame is removed from stack

Method area – where class def and runtime constants

Native heap – where native libraries and code are loaded

Employee e1 = new Employee ();

E1 – reference to original will be in stack memory, but original physical object is in Heap memory

33) If local variable of a method is primitive, its stored in stack memory, if its reference type then it’s referred to heap memory using object reference

Instance variables are stored in heap

34)Javadoc – we can write @param,@seen,@author,<p> html tags etc.

35) String pool is special area of heap memory that stores pool of unique string literals in java

String interning is checking if string existed in pool and returning it back

Stop/restart java application if String pool is to be destroyed

36) == compares if they have same value and memory location

37) String-intern is used to move String object created with new into String pool

38) String.valueOf() – it’s used to convert any input to String type

or

we can use directly like

int age = 30;

String message = “My age is: “+ age;

String piValue = “”+3.14;

39)searching use – indexOf, contains,

40)String. Join internally uses StringBuilder for concatenation, to join multiple strings.

If any element in list is null, it vl be treated as string “null” in resulting string

41) String s1=”hello”;

s1 = “how are you”

Immutability applies to String object stored in memory, but not reference variable of String type.

42) Stringbuilder object reference will always point to same object

StringBuffer is thread safe.

Append,insert,delete,replace and reverse are present

CharArrayWriter cw = new CharArrayWriter();  
cw.write("hello");

use .toString() for all the above 3 options

43) parsing is converting String value type to primitive data type,

String str = “12345”;

int value = Integer.parseInt(s);

Integer myObj = new Integer(str); - depreciated since java9

For character use chatAt or characterArray();

44) OPERATOR TYPES – unary,binary and ternary

Arithmetic, Relational, logical ,bitwise

45) Addition operator happens from Right to left

46) String str = null;

String str1 = “6”+ null – valid;

String str2 = 6+null - invalid

47) Double.isNan(num1) is true

48) && and || always evaluates the LHS side operation only

49) bitwise always needs type int only

* Selection,iteration,branching and exception
* From java7,String is also allowed in switch case expression

i.e.

switch(“test”):

case “Bannana”:

case “Apple”:

* Switch expression is started from Java-14, but switch statement is also still available
* Switch expression assumes break statement by default and no need to mention it explicitly
* Switch expression can also be used to return a value
* If switch expr has multiple java statements, yield shld be used and default is mandatory in such case
* Modules are introduced since java-9
* Packages – model layer,service layer,utility layer, controller/view layer,presentation layer
* Java doesn’t support nesting package structure and don’t use recursive imports
* Access modifier is only for class level instance/static variables, but not local variables.
* Data carrying classes are called as POJO classes
* DTO and java-beans are alternate names to POJO
* POJO classes are used to represent entities/data objects,they contain properties(variables) that hold data . getter used to get value of private field and setter used to get value from private field.
* POJO gives encapsulation,data validation,flexibility and access control