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Midterm Exam

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Q1. True or False (2 points each)

11

- If you increase the number of attributes in training data, classification algorithm will take more time to execute. True

- Classification algorithm creates a model from the testing data that can be used to predict the classes of training data. False

- You should define components for your interface using XML file if the number of that components will change during run time. False

- In relative layout, you can put elements in both direction (horizontal or vertical). True

- An activity always runs in the background. False

- The manifest file will automatically be generated if deleted. False

- XML files are the only way to specify a layout. False

- Discretization filter will be useful when applied to gender attribute. False

- drawable folder will hold string files. False

- R class is a static class that is used for referencing the data contained in your resource files. True

- We have to create R class manually. False

- All activities should be declared in AndroidManifest.xml file. False

- If you need any permission to use any hardware component like sensor, you should declare that permission in R class. False

- Confusion matrix size should be 2X2. True

- Android is a high level programming language. False

Q2. Multiple Choice (2 points each)

1-Which of the following Java code samples could be used to apply an XML layout resource to an Activity?

- a) findViewById(R.id.help);
- b) setContentView(R.layout.help);
- c) addContent (R.layout.help);
- d) setVisible(true);

2-How you get access to a TextView, (ID:tView), in your XML file?

- A) TextView t = (TextView) getViewById(tView);
- B) TextView t = (TextView) findViewById(R.id.tView);
- C) TextView t = findViewById(R.id.tView);
- D) TextView t = getViewById(tView);

3-What is a correct statement about an XML layout file?

- a. A layout PNG image file
- b. A file used to draw the content of an Activity
- c. A file that contains all application permission information
- d. A file that contains a single activity widget.

4-if you like to write a code to download images from internet, you should write that code in

- a. Activity
- b. Service
- c. Broadcast Receivers:
- d. Content Providers

5-if you like to display a message in your application when the device detects a WIFI network. To handle WIFI state should use a

a. Activity

b. Service

c. Broadcast Receivers:

d. Content Providers

6. If App1 needs data from App2,

a. App2 should use the content provider of App1

b. App1 should use the content provider of App1

c. App1 should use the content provider of App2

d. App2 should use the content provider of App2

7. To initialize a Button in your android APP, you should use

a. Activity

b. Service

c. Broadcast Receivers:

d. Content Providers

8. If you have a list of child views and you needs to draw them sequentially in a single direction, either horizontally or vertically. You should use

a. TableLayout

b. RelativeLayout

c. FrameLayout

d. LinearLayout

Based on the following code answer Q9,10,11,12 and 13

```
public class ProductDataBase extends SQLiteOpenHelper {  
    public ProductDataBase(Context context, int version) {  
        super(context, "Lab3DB", null, version);  
    }  
  
    @Override  
    public void onCreate(SQLiteDatabase sqLiteDatabase) {
```



```
}  
@Override  
public void onUpgrade(SQLiteDatabase sqLiteDatabase, int i, int ii) {  
}
```

9. Which of the following statements is true

- a. ProductDataBase is a super class.
- b. ProductDataBase is an interface.
- c. SQLiteOpenHelper is a super class.
- d. ProductDataBase is an abstract class.

10. What is the function of the following line? `super(context, "Lab3DB", null, version);`

- a. Call the constructor of SQLiteOpenHelper class
- b. Call the first method in ProductDataBase class
- c. Call the constructor of ProductDataBase class
- d. Call the first method in SQLiteOpenHelper class

11. Where is the correct position of the following line?

```
sqLiteDatabase.execSQL("CREATE TABLE IF NOT EXISTS tblProduct");
```

- a. The ProductDataBase constructor. ~~X~~
- b. onCreate method.
- c. onUpgrade method.
- d. In main activity ~~X~~

12. Where is the correct position of the following line?

```
sqLiteDatabase.execSQL("ALTER TABLE tblProduct");
```

- a. The ProductDataBase constructor.
- b. onCreate method.

c. onUpgrade method.

d. In main activity

13. if the version of Lab3DB data base is 5. Consider the following line of code in main activity

```
ProductDataBase objProductDao = new ProductDataBase(this, 6);
```

Which of the following statement is true ?

a. After the execution of the above line, onUpgrade method will be called

b. After the execution of the above line, onCreate method will be called

c. After the execution of the above line, tblProduct will be deleted.

d. none of the above.

Based on the following code answer Q14,15,16,17,18,19 and 20

Section1

```
public class MainActivity extends AppCompatActivity {  
    @Override protected void onCreate(Bundle savedInstanceState) {  
        super.onCreate(savedInstanceState);  
        setContentView(R.layout.activity_main);  
        Button button= new Button(this);  
        button.setOnClickListener(new View.OnClickListener() {  
            @Override public void onClick(View v) {  
                AsyncTask connectionAsyncTask = new AsyncTask (MainActivity.this);  
                connectionAsyncTask.execute("http://www.mocky.io/v2/5702bdeb270000fd0306aeb2"); } });  
    }  
}
```

Section2

```
protected void onPreExecute() {  
}  
protected void onPostExecute(String s) {  
}  
protected String doInBackground(String... params) {  
    Return "mohammad"  
}
```


14. The error in section 1 is:

a. MainActivity extends AppCompatActivity ; MainActivity can extends only Activity class.

b. Button button= new Button(this);we cannot pass this as a parameter

c. AsyncTask connectionAsyncTask = new AsyncTask (MainActivity.this); we can't pass MainActivity.this

d. AsyncTask connectionAsyncTask = new AsyncTask (MainActivity.this); we can't make object from AsyncTask

15. When connectionAsyncTask.execute("Facebook.com") is executed, What is the order of the execution of methods in section 2?

a. onPreExecute, onPostExecute, doInBackground

b. onPostExecute, onPreExecute, doInBackground

c. onPreExecute, doInBackground, onPostExecute

d. doInBackground, onPreExecute, onPostExecute

16. Which method will execute in Back ground thread?

a. onPreExecute

b. onPostExecute

c. doInBackground

d. none of the above

17. What is the value of String s in onPostExecute method ?

a. null

b. "Facebook.com"

c. "mohammad"

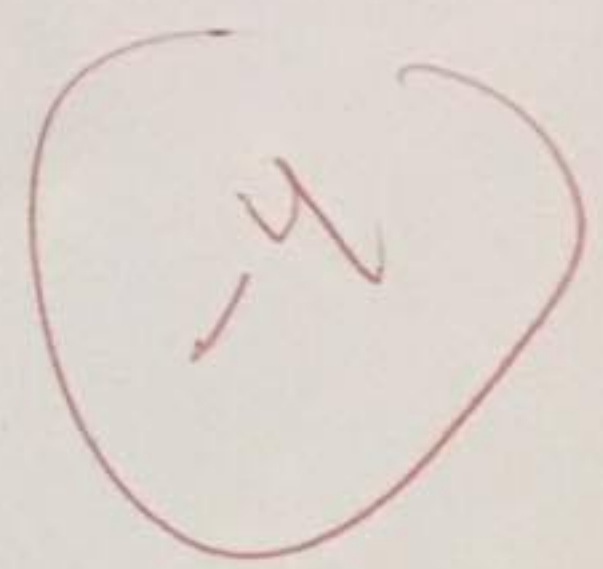
d. "empty string"

18. Which of the following statement is true

- a. ANR error is occurred when UI thread has a process needs long time to execute ✓
- b. ANR error is occurred when back ground thread has a process needs long time to execute
- c. ANR error is occurred when UI thread has a process needs 0.0005ms to execute
- d. ANR error is occurred when back ground thread has a process needs 0.0005ms to execute

19. To solve ANR error

- a. you should delete any code needs long time from your code.
- b. use AsyncTask class ✓
- c. create new thread for any code needs long time from your code
- d. b and c



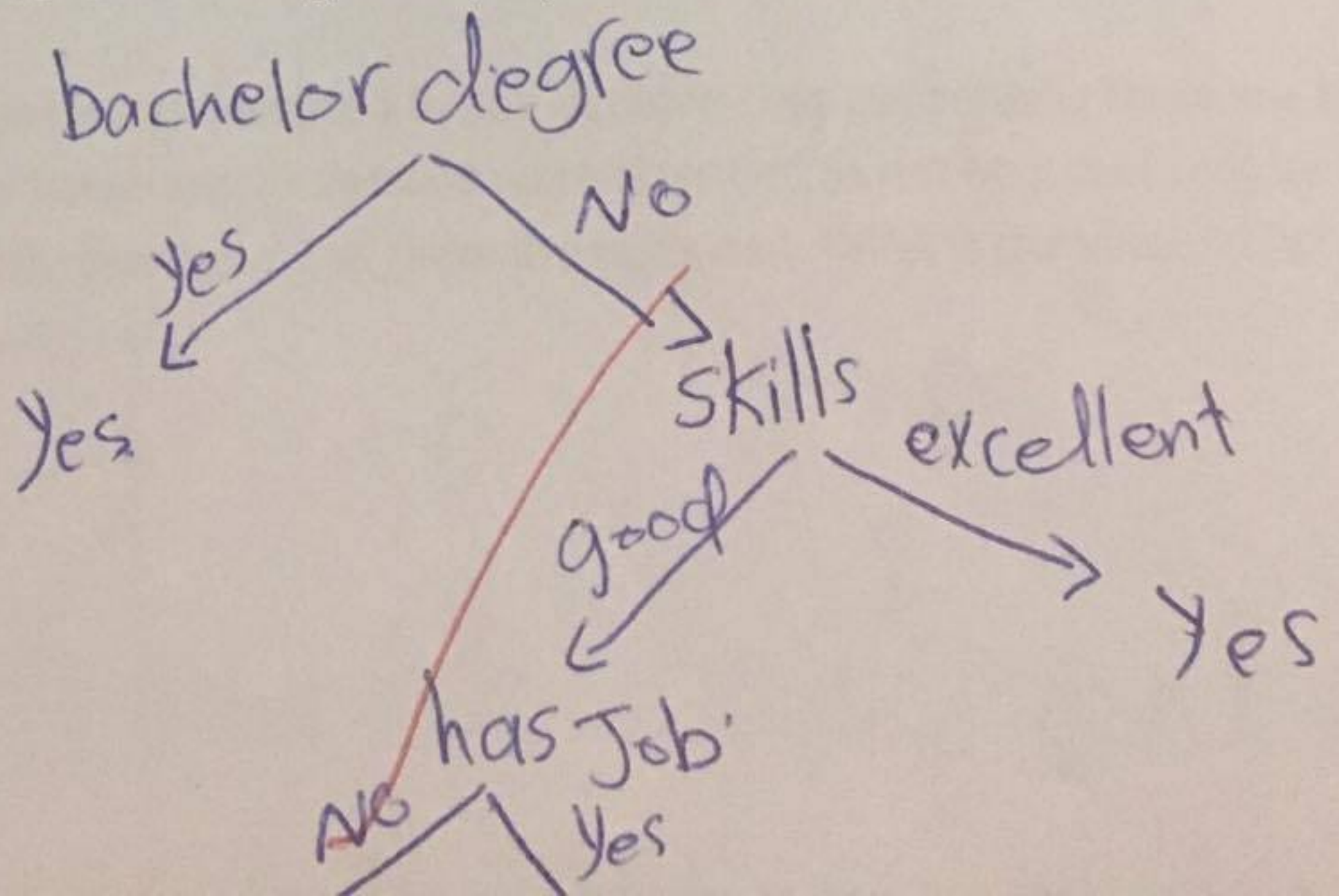
20. What is the function of setContentView(R.layout.activity_main);

- a. set the activity content from a layout resource ✓
- b. get a resource from res folder
- c. get XML file in layout file
- d. none of the above

Q3 . Consider the following training data for a company which used to determine if it has to accept new application for a job or not.

Name	Has a job	skills	bachelor degree	accepted
mohammad	yes	Excellent	yes	yes
ayman	no	good	no	no
majd	no	Excellent	yes	yes
abed	yes	good	no	yes
majed	no	Excellent	no	yes

1. Build the decision tree for the training data. (6%)



2. If you have the following testing data

Name	Has a job	skills	bachelor degree
ibrahim	yes	good	yes
tareq	no	good	yes

What is the value of output class (accepted) for Ibrahim and tareq? (4%)

Ibrahim \Rightarrow Yes.
tareq \Rightarrow Yes

3. If the testing data is not available, what is the best technique to estimate the accuracy of decision tree? (4%)

Cross validation.

4. If 20 persons were classified as accepted by the decision tree, but actually there are four of them are not accepted (NO). What is the value of Precision? (4%)

$$\text{Accuracy} = \frac{TP + TN}{TP + TN + FP + FN}, \text{ Recall} = \frac{TP}{TP + FN}$$

$$\text{Precision} = \frac{TP}{TP + FP}, \text{ False Positive Rate} = \frac{FP}{FP + TN}$$

$$\text{False Negative Rate} = \frac{FN}{FN + TP}, \text{ F-measure} = \frac{2 * \text{Precision} * \text{Recall}}{\text{Precision} + \text{Recall}}$$

$$\text{Precision} = \frac{16}{20} = 0.8$$

5. If 20 persons were classified as accepted by the decision tree but actually there are 18 of them are accepted and there are 10 persons were classified as not accepted (no) by the decision tree but actually there are 2 of them are accepted. What is the value of Accuracy? (4%)

$$\text{Accuracy} = \frac{18 + 8}{30} = \frac{26}{30}$$

TP 18
FP 2
TN 8
FN 2

6. Based on the confusion matrix below, calculate the following measures:

a	b	←-- classified as	
200	18	a = class_0	TP
48	361	b = class_1	N

1. Recall (4%)

$$\frac{TP}{TP+FN} = \frac{200}{200+48} = \frac{200}{248} = \frac{200}{248}$$

2. False Positive Rate (4%)

$$\frac{FP}{FP+TN} = \frac{48}{48+361} = \frac{48}{409}$$