

# 151174\_exam\_question\_extraction\_PDF

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## 0.0.1 Adm Details

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MSc Data Science and Analytics

## 0.0.2 System Architecture

The focus of this project will be the 'Questions ML model' the other sections and functionalities will be tackled at later stages of the research.

## 0.0.3 Methodology

To achieve the goal of this project, we are going to adopt the CRISP-DM Methodology which shall involve the following steps:

Business Understanding - Outlining the problem set and the main objective - Done

Data Understanding - Highlighting the source of data to be used in model training and evaluation - Done

Data Preparation - Processing and transforming the data to a format that is more model-friendly - Done

Data Modelling - Training several machine learning algorithms (Traditional and Modern) to classify text as question or not - Done

Model Optimization - Balancing between performance and resource consumption of our main model(BERT) - Done

Model Evaluation - Using new text data extracted from images to ascertain the results of the models are as expected - Done

Model Comparison and Selection - Using model performance metrics to rank the appropriateness of the models - Done

Model Deployment - Setting an online platform through which users can interact with the model - Done

## 0.0.4 Step 1 : Business Understanding

Most exams in Kenyan secondary to higher learning institutions are hand-written, they are then assessed by the lectures/teacher who then, individually decide the score for each answer and collectively for each paper. The process is long and strenuous, taking a lot of energy and time for

the educators. For the students, the time taken for assessment reduces the quality and quantity of attention they get from their lecturers/teachers; the results too, considering the human element, might also be biased and inaccurate. For institutions, learning calendars and the quality of learning experiences are negatively affected.

This can be improved through artificial intelligence, specifically by incorporating machine learning models and pretrained large language models in models. They can be faster, use a wider knowledge base and be a more standard evaluation approach especially for fact-based theoretical examinations.

Smartphone usage penetration in the country is quite decent, these phones are equipped with decent cameras and internet browsers - conduits to utilization of deployed machine learning solutions. The smartphones can be used to take photos of the examinations and answers then uploaded through the deployed solutions, from which assessments and results would be relayed back to the assessors.

One of the most critical step for machine learning involvement is the extraction of questions from the photos of examination question papers, with just that, it would actually be possible to generate marking schemes. The idea is to then couple this with answer this with question extract and the results of this pair is what would then be passed to pretrained models such as GPT 4 for evaluation.

The focus of this project is to successfully extract/classify questions from images exam question papers.

Hypothesis: Machine Learning models can be used to determine if a particular line of text is a question or not in the process of exam marking automation.

### 0.0.5 Step 2 : Data Understanding

For any machine learning task, appropriate, sufficient and clean data is necessary.

This task is going to be using a 1800 row - csv file of text that has been extracted from exams and labelled as either a question or not.

Let's look at the data:

```
[ ]: # Import the necessary libraries
import pandas as pd

# Load data
df = pd.read_csv('labelled_text.csv')

# Shuffle the dataframe rows
df = df.sample(frac=1).reset_index(drop=True)

#look at the first five rows
df.head()
```

```
[ ]:
```

	text	is_question	label
0	It was a sunny day in Paris. They went for a l...	0.0	No
1	SCHOOL OF COMPUTING AND INFORMATION TECHNOLOGY	0.0	tbd
2	MASTER OF SCIENCE IN DATA SCIENCE AND ANALYTICS	0.0	tbd
3	(i) State FOUR importance of personal hygiene ...	1.0	tbd
4	63. Define the key concepts of Physics. (10 Ma...	1.0	Yes

The data has three columns, text, is\_question and label, text and is\_question are the most important columns

The data has now been loaded let's look at it's shape:

```
[ ]: #Show the rows and columns of the data  
df.shape
```

```
[ ]: (1809, 3)
```

The data has 1809 rows and 3 columns - sufficient for training.

Let's look at its statistical properties:

```
[ ]: #generate the statistical properties of the data:  
df.describe()
```

```
[ ]:  
      is_question  
count  1804.000000  
mean    0.449002  
std     0.497530  
min     0.000000  
25%     0.000000  
50%     0.000000  
75%     1.000000  
max     1.000000
```

### 0.0.6 Step 3 : Data Preparation

**Step 3.1 : Dealing with Null Values** First of all, we need to look for null values in the data that might mislead models and cause errors:

```
[ ]: #Look for null values in each column  
print(df.isnull().sum())
```

```
text          6  
is_question   5  
label         1  
dtype: int64
```

There are missing/null values in each of the columns: 7 in text, 5 for is\_question and 1 for label. The numbers are not worrying, we can drop the rows with null values with a minimal effect on the size of the dataset.

```
[ ]: #drop rows with null values  
df.dropna(inplace=True)  
  
#Check for null values again  
print(df.isnull().sum())
```

```

text          0
is_question   0
label         0
dtype: int64

```

```

[ ]: #Show the rows and columns of the data
df.shape

```

```

[ ]: (1800, 3)

```

The are missing/null values have now been removed.

**Step 3.2 : Dealing with column formats** We now need to look to at the target variable: is\_question, the data type should either be 0 or 1.

Previously however, on the data understanding section, the format appeared to be a float 1.0, 0.0, we need to change the format to integer:

```

[ ]: #Convert float to int
df['is_question'] = df['is_question'].astype(int)

#Look at the dataframe again
df.head()

```

```

[ ]:

```

	text	is_question	label
0	It was a sunny day in Paris. They went for a l...	0	No
1	SCHOOL OF COMPUTING AND INFORMATION TECHNOLOGY	0	tbd
2	MASTER OF SCIENCE IN DATA SCIENCE AND ANALYTICS	0	tbd
3	(i) State FOUR importance of personal hygiene ...	1	tbd
4	63. Define the key concepts of Physics. (10 Ma...	1	Yes

The format of our target attribute: is question has been succesfully converted from float to integer.

**Step 3.3 : Feature Engineering** Our dataframe has one text column, however to have an effective modelling progress, we need to extract some characteristics from the main text. These characteristics will be added as new columns and will inform the machine learning algorithms too.

The characteristics that are important in determining if a text is question or not include:

If the text has a prompt word e.g. explain, define, describe

If the text starts with indexing characters e.g. i), 1., a)

If the text end with marks characters e.g. ks), ks}, ks]

If the text ends with a lowercase or uppercase character

If the text contains 'question' in it

Lets generate the features from the 'text' column:

```
[ ]: #Importing the necessary libraries
import re
from sklearn.utils import shuffle
from sklearn.feature_extraction.text import TfidfVectorizer

[ ]: def extract_attributes(text):
    # List of prompt words
    prompt_words = ["what", "why", "when", "where", "explain", "describe",
    ↪ "give", "how", "discuss", "write", "define", "do", "analyze", "compare"]

    # First word, ignoring leading spaces and converting to lowercase for
    ↪ case-insensitive comparison
    clean_line = text.strip()

    # Split the line into words
    words = clean_line.split()

    second_word = ""
    # Check if there are at least three words to get the word between the first
    ↪ and second space
    if len(words) >= 3:
        second_word = words[1] # This is the word between the first and second
    ↪ spaces
    else:
        second_word = ""

    first_word = clean_line.split()[0].lower() if text.strip() else ""
    single_word = int(len(text.split()) == 1) if text else 0

    # Check if the first word is a prompt word
    starts_with_prompt_word = int((first_word.lower() in prompt_words) or
    ↪ (second_word.lower() in prompt_words))
    contains_prompt_word = int(any(pw in text.lower() for pw in prompt_words))

    # Refined patterns for 'indexed_start'
    patterns = [
        r"^(?([a-zA-Z])\s", # Matches patterns like (a) , b)
        r"^(d+\.\s", # Matches patterns like 1.
        r"^(?([ivxlcdm]+)\s", # Matches patterns like (i) , ii)
    ]
    # Check the pattern against the first 1 to 5 characters of the text
    indexed_start = int(any(re.match(pattern, text.strip()[:7]) for pattern in
    ↪ patterns))

    question_start = int(first_word == "question")
    last_four_chars = text[-4:] if len(text) >= 4 else text
```

```

last_q_chars = ["ks) ", "rks) ", "mks) ", "ks] ", "rks] ", "mks] ", "ks} ", "rks} ",
↪ "mks} ", "ks)", "rks)", "mks)", "ks]", "rks]", "mks]", "ks}", "rks}", "mks}"]
# ends_with_ks = int(last_four_chars == "ks) " or last_four_chars == "rks) "
↪ or last_four_chars == "mks) ")
ends_with_ks = int(any(text.endswith(q_char) for q_char in last_q_chars))
contains_ks = int(any(q_char in text for q_char in last_q_chars))
lower_start = int(text.strip()[0].islower()) if text.strip() else 0
upper_start = int(text.strip()[0].isupper()) if text.strip() else 0

return first_word, indexed_start, question_start, last_four_chars,
↪ ends_with_ks, contains_ks, lower_start, upper_start, contains_prompt_word,
↪ starts_with_prompt_word, single_word

# Reapply the updated function to the dataframe
df[['first_word', 'indexed_start', 'question_start', 'last_four_chars',
↪ 'ends_with_ks', 'contains_ks', 'lower_start',
↪ 'upper_start', 'contains_prompt_word', 'starts_with_prompt_word', 'single_word']]
↪ = \
    df['text'].apply(lambda x: pd.Series(extract_attributes(x)))

# Shuffle the dataframe
df = shuffle(df, random_state=42)

# Save the feature generated dataset to csv
df.to_csv('feature_generated.csv')

# Transform the target variable to numeric(vectorizing) for easy processing by
↪ ML Models
vectorizer = TfidfVectorizer()
X_text = vectorizer.fit_transform(df['text'])

# Display the updated dataframe
df.head()

```

```

[ ]:
      text  is_question label \
1600  112. Outline the key concepts of Mathematics. ...      1  Yes
948    LIII) Explain the key concepts of Mathematics...      1  Yes
874                NDNA Teun NANG aaa po aey EN c          0  tbd
163    Cells are the basic building blocks of all mks...      0  no
1279  Calculus allows ks) the calculation of change ...      0  no

      first_word  indexed_start  question_start  last_four_chars  ends_with_ks \
1600      112.              1              0              rks)          1
948      liii)              0              0              rks)          1

```

874	ndna	0	0	EN c	0
163	cells	0	0	isms	0
1279	calculus	0	0	tion	0

	contains_ks	lower_start	upper_start	contains_prompt_word	\
1600	1	0	0	0	
948	1	0	1	1	
874	0	0	1	0	
163	0	0	1	0	
1279	1	0	1	0	

	starts_with_prompt_word	single_word
1600	0	0
948	1	0
874	0	0
163	0	0
1279	0	0

The important characteristics/features have now be generated and can now be used in the modelling phase.

### 0.0.7 Step 4 : Modelling

In this particular step, we are going to take two approaches to setup binary classification models: is\_question (1 or 0)

Traditional machine learning approaches: Decision Trees, XGBoost, SVM

Modern approaches: Deeplearning - Tensorflow and Transformers-BERT

**Step 4.1 : Feature Selection** Our target variable is is\_question.

Some characteristics are more important than others in determining if some text is a question or not. In this step we are going to compare and rank the importance of our columns/attributes in determining if a text is a question or not using a correlation matrix and the chi-squared test:

```
[ ]: #Importing the neccesary libraries
import matplotlib.pyplot as plt
import seaborn as sns

# Set the default figure size
plt.rcParams['figure.figsize'] = [6, 3]

# Set the global theme for Seaborn
sns.set_theme(
    style='whitegrid', # Sets the background to white grid
    palette='deep',    # Sets the color palette
    font='sans-serif', # Sets the font to sans-serif
    font_scale=1.25,   # Scales up the font size by 25%
```

```

    color_codes=True,    # Allow the use of shorthand color codes
    rc={"figure.figsize": (6, 3)} # Sets the default figure size
)

```

```

[ ]: # Ensure boolean columns are in integer format for correlation analysis
bool_cols = ['indexed_start', 'question_start', 'ends_with_ks', 'contains_ks',
    ↪ 'lower_start', 'upper_start', 'contains_prompt_word', 'single_word']
df[bool_cols] = df[bool_cols].astype(int)

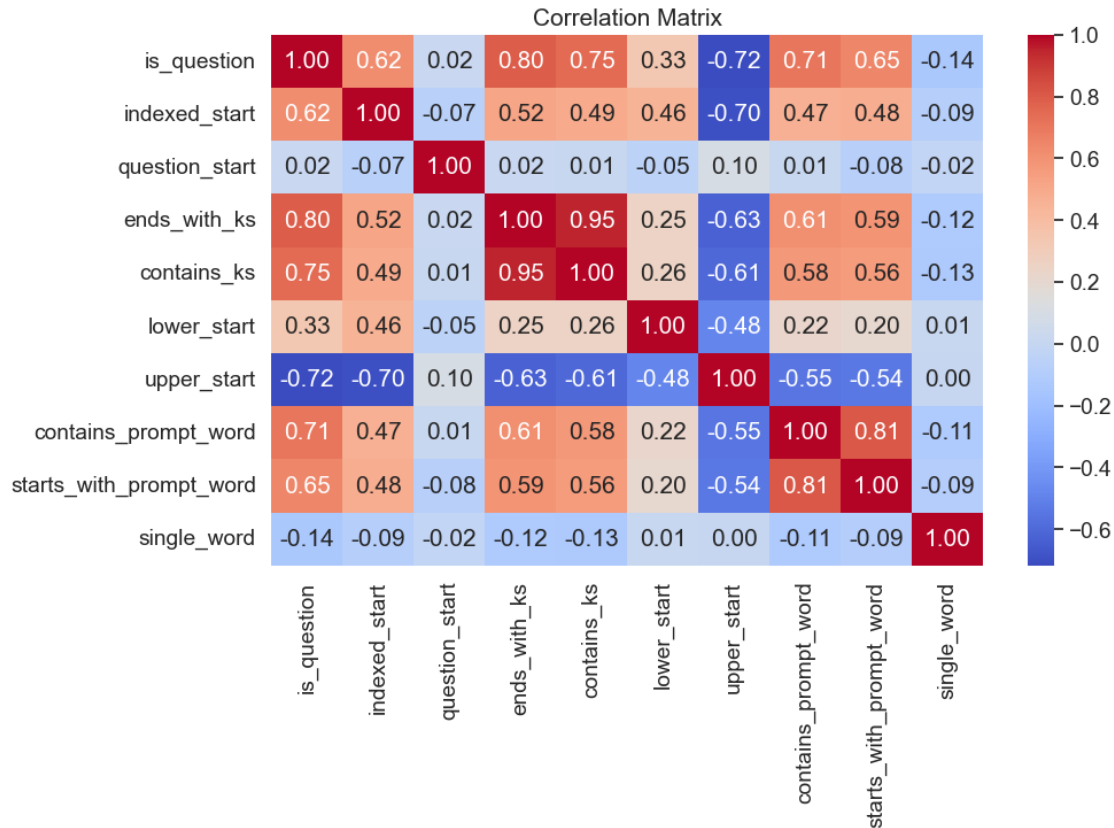
# Compute correlation matrix
correlation_matrix = df.corr()

# Plotting the heatmap
plt.figure(figsize=(10, 6))
sns.heatmap(correlation_matrix, annot=True, cmap='coolwarm', fmt=".2f")
plt.title("Correlation Matrix")
plt.show()

# Recommendations for best features to predict 'is_question' based on
    ↪ correlation
correlation_with_target = correlation_matrix['is_question'].
    ↪ sort_values(ascending=False)
best_features = correlation_with_target.index[1:] # Exclude 'is_question'
    ↪ itself
best_features_recommendations = best_features[:3] # Top 3 features

```





Determining the most important features using Chi-squared:

```
[ ]: #Importing the neccesary libraries
from sklearn.feature_selection import SelectKBest, chi2

[ ]: # Preparing the dataset for feature selection
X = df.drop(['text', 'is_question', 'label', 'first_word', 'last_four_chars'],_
            ↪axis=1)
y = df['is_question']

# Apply SelectKBest class to extract top features
bestfeatures = SelectKBest(score_func=chi2, k='all')
fit = bestfeatures.fit(X,y)
df_scores = pd.DataFrame(fit.scores_)
df_columns = pd.DataFrame(X.columns)

# Concatenating two dataframes for better visualization
featureScores = pd.concat([df_columns,df_scores],axis=1)
featureScores.columns = ['Feature','Score'] # Naming the dataframe columns
featureScores = featureScores.sort_values(by='Score', ascending=False)
```

```
# Display the top features based on score
featureScores.head(10)
```

```
[ ]:
      Feature      Score
2      ends_with_ks  582.034261
6  contains_prompt_word  570.839151
7  starts_with_prompt_word  550.402381
0      indexed_start  527.231511
3      contains_ks  490.860826
5      upper_start  355.469105
4      lower_start  175.090555
8      single_word   32.727273
1      question_start   0.512159
```

The important characteristics/features are ends\_with\_ks, contains\_prompt\_word, starts\_with\_prompt\_word, indexed\_start and upper\_start.

Selecting the important features/columns for easier referencing:

```
[ ]: selected_features =
      ↪ ['contains_prompt_word', 'starts_with_prompt_word', 'ends_with_ks',
      ↪ 'indexed_start', 'lower_start', 'upper_start']
```

## Step 4.2 : Traditional Machine Learning Algorithms    Step 4.2.1 : Decision Trees

```
[ ]: #Importing the necessary libraries
import os
from scipy.sparse import hstack
from sklearn.model_selection import train_test_split
from sklearn.tree import DecisionTreeClassifier
from sklearn.metrics import classification_report, confusion_matrix,
      ↪ accuracy_score
from joblib import dump
import pickle
```

Training the model

```
[ ]: # Other selected features
X_other = df[selected_features]

# Convert X_other to a dense array if it's not already
X_other_dense = X_other.to_numpy()

# Combine the text features with other selected features
# Convert the sparse matrix to a dense matrix
X_combined = hstack([X_text, X_other_dense]).toarray()

# Splitting the combined dataset: 80/20 split
```

```
X_train, X_test, y_train, y_test = train_test_split(X_combined, y, test_size=0.
↳2, random_state=42)
```

```
# Train a Decision Tree model with the combined features
```

```
DTmodel = DecisionTreeClassifier()
```

```
DTmodel.fit(X_train, y_train)
```

```
[ ]: DecisionTreeClassifier()
```

Testing and Visualizing the DT Model's performance:

```
[ ]: # Evaluate the model
```

```
y_pred = DTmodel.predict(X_test)
```

```
# Generate classification report
```

```
report = classification_report(y_test, y_pred, output_dict=True)
```

```
# Convert report to pandas DataFrame
```

```
report_df = pd.DataFrame(report).transpose()
```

```
# Plotting the classification report heatmap
```

```
plt.figure()
```

```
sns.heatmap(report_df.iloc[:-1, :].T, annot=True, cmap='Greens')
```

```
plt.title('Decision Tree Classification Report Heatmap')
```

```
plt.yticks(rotation=0)
```

```
plt.show()
```

```
# Calculate and display the confusion matrix
```

```
cm = confusion_matrix(y_test, y_pred)
```

```
plt.figure()
```

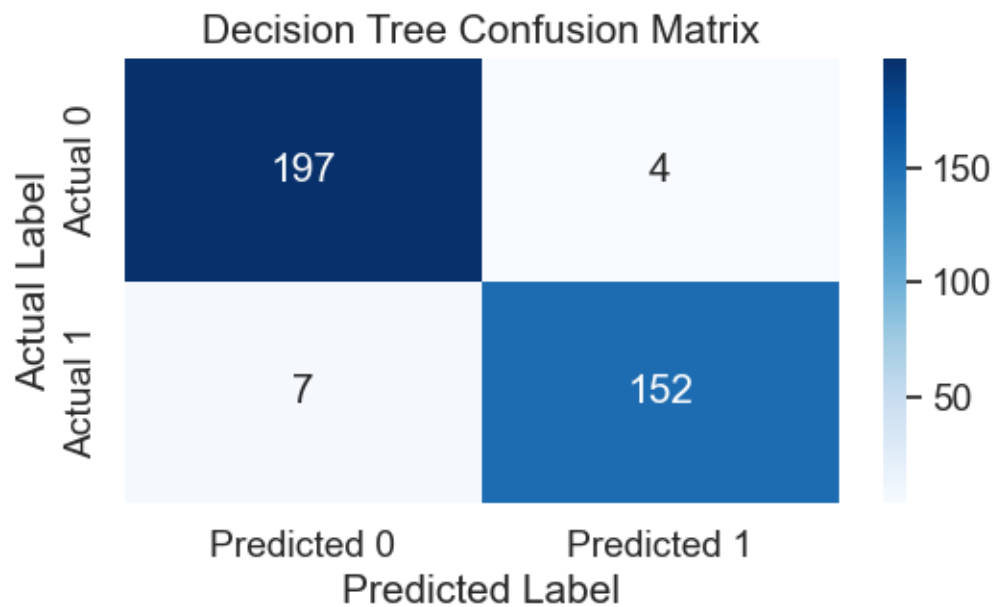
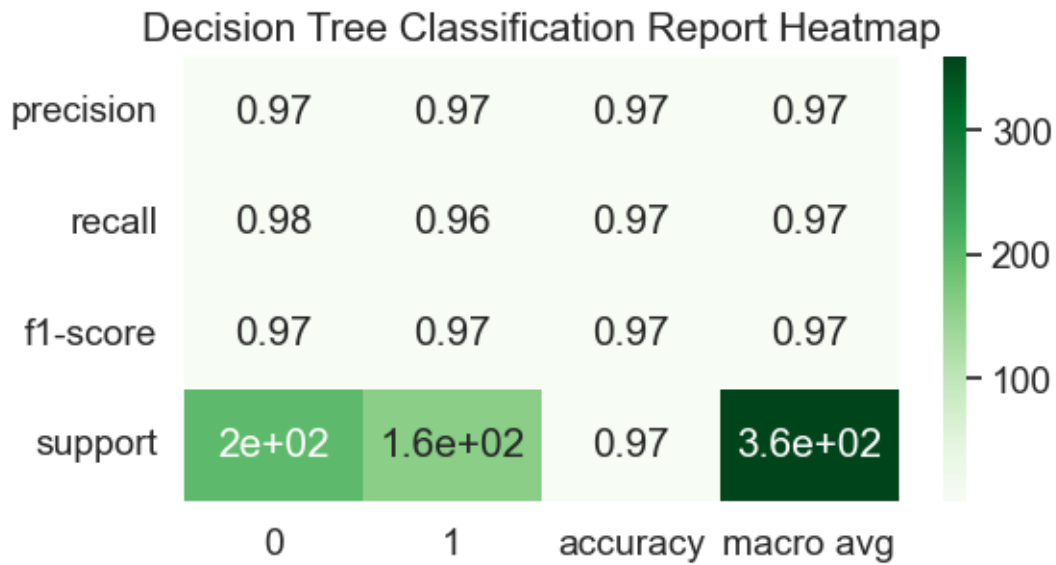
```
sns.heatmap(cm, annot=True, fmt='d', cmap='Blues', xticklabels=['Predicted 0', 'Predicted 1'], yticklabels=['Actual 0', 'Actual 1'])
```

```
plt.ylabel('Actual Label')
```

```
plt.xlabel('Predicted Label')
```

```
plt.title('Decision Tree Confusion Matrix')
```

```
plt.show()
```



The Decision Tree model shows decent performance

Saving the model:

```
[ ]: # Save the model using pickle
model_path = os.path.join('models', 'DTModel.pkl')
with open(model_path, 'wb') as file:
    pickle.dump(DTmodel, file)
```

### Step 4.2.3 : Logistic Regression

```
[ ]: #Importing the necessary libraries
from sklearn.linear_model import LogisticRegression
```

Training the model:

```
[ ]: # use the selected features
X = df[selected_features]
y = df['is_question']

# Combine the text features with other selected features
X_combined = hstack([X_text, X])

# Splitting the combined dataset
X_train, X_test, y_train, y_test = train_test_split(X_combined, y, test_size=0.
↪2, random_state=42)

# Train the logistic regression model
LRmodel = LogisticRegression(max_iter=1000) # Increase max_iter if needed
LRmodel.fit(X_train, y_train)

# Evaluate the model
y_pred = LRmodel.predict(X_test)
```

Testing and Visualizing the DT Model's performance:

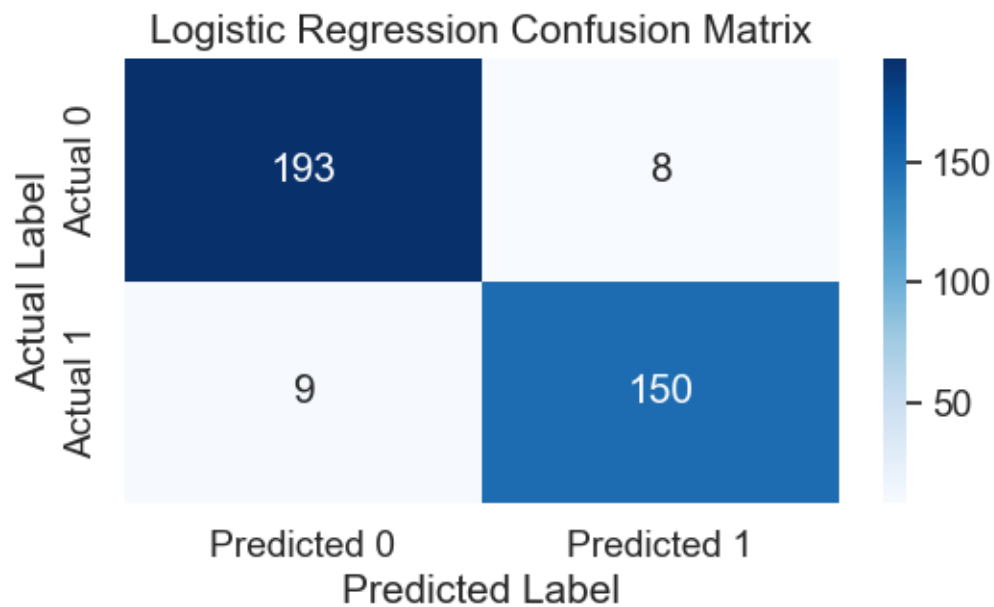
```
[ ]: # Generate classification report
report = classification_report(y_test, y_pred, output_dict=True)

# Convert report to pandas DataFrame
report_df = pd.DataFrame(report).transpose()

# Plotting the classification report heatmap
plt.figure()
sns.heatmap(report_df.iloc[:-1, :].T, annot=True, cmap='Greens')
plt.title('Logistic Regression Classification Report Heatmap')
plt.yticks(rotation=0)
plt.show()

# Calculate and display the confusion matrix
cm = confusion_matrix(y_test, y_pred)
plt.figure()
sns.heatmap(cm, annot=True, fmt='d', cmap='Blues', xticklabels=['Predicted 0',
↪'Predicted 1'], yticklabels=['Actual 0', 'Actual 1'])
plt.ylabel('Actual Label')
plt.xlabel('Predicted Label')
plt.title('Logistic Regression Confusion Matrix')
```

```
plt.show()
```



Saving the model:

```
[ ]: # Save the model using pickle
model_path = os.path.join('models', 'LRModel.pkl')
with open(model_path, 'wb') as file:
```

```
pickle.dump(LRmodel, file)
```

Step 4.2.3 : XGBoost

```
[ ]: #Importing the neccesary libraries  
from xgboost import XGBClassifier
```

Training the model:

```
[ ]: # Other selected features  
X_other = df[selected_features].to_numpy()  
  
# Combine the text features with other selected features  
X_combined = hstack([X_text, X_other])  
  
# Splitting the combined dataset  
X_train, X_test, y_train, y_test = train_test_split(X_combined, y, test_size=0.  
↪2, random_state=42)  
  
# Train an XGBoost model with the combined features  
XGBmodel = XGBClassifier(use_label_encoder=False, eval_metric='logloss')  
XGBmodel.fit(X_train, y_train)
```

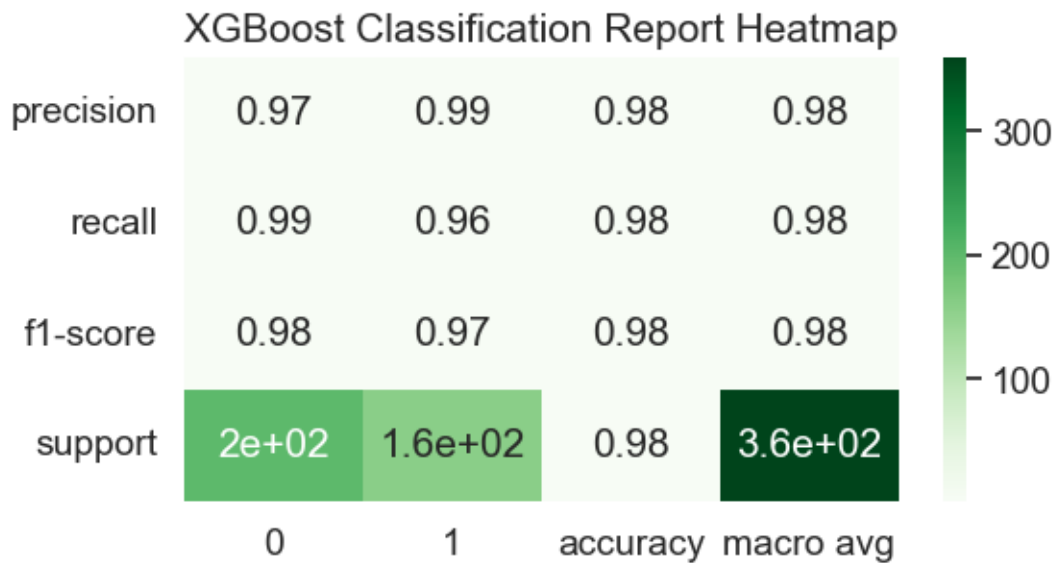
```
[ ]: XGBClassifier(base_score=0.5, booster='gbtree', callbacks=None,  
                  colsample_bylevel=1, colsample_bynode=1, colsample_bytree=1,  
                  early_stopping_rounds=None, enable_categorical=False,  
                  eval_metric='logloss', gamma=0, gpu_id=-1,  
                  grow_policy='depthwise', importance_type=None,  
                  interaction_constraints='', learning_rate=0.300000012,  
                  max_bin=256, max_cat_to_onehot=4, max_delta_step=0, max_depth=6,  
                  max_leaves=0, min_child_weight=1, missing=nan,  
                  monotone_constraints='()', n_estimators=100, n_jobs=0,  
                  num_parallel_tree=1, predictor='auto', random_state=0,  
                  reg_alpha=0, reg_lambda=1, ...)
```

Testing and Visualizing the XGBoost model's performance:

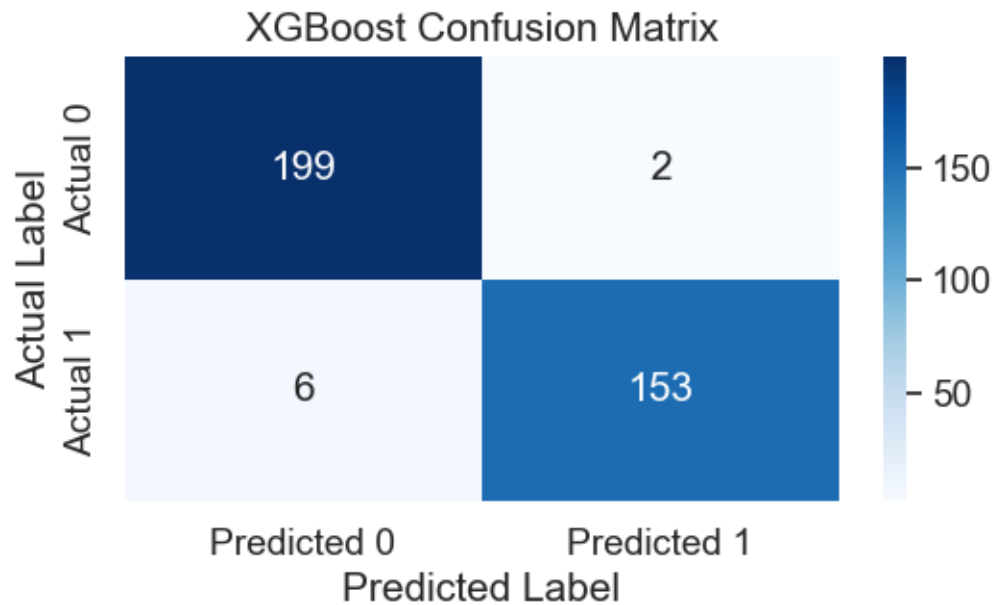
```
[ ]: # Evaluate the model  
y_pred = XGBmodel.predict(X_test)  
  
# Generate classification report  
report = classification_report(y_test, y_pred, output_dict=True)  
  
# Convert report to pandas DataFrame  
report_df = pd.DataFrame(report).transpose()  
  
# Plotting the classification report heatmap  
plt.figure()  
sns.heatmap(report_df.iloc[:-1, :].T, annot=True, cmap='Greens')
```

```
plt.title('XGBoost Classification Report Heatmap')
plt.yticks(rotation=0)
plt.show()

# Calculate and display the confusion matrix
cm = confusion_matrix(y_test, y_pred)
plt.figure()
sns.heatmap(cm, annot=True, fmt='d', cmap='Blues', xticklabels=['Predicted 0', 'Predicted 1'], yticklabels=['Actual 0', 'Actual 1'])
plt.ylabel('Actual Label')
plt.xlabel('Predicted Label')
plt.title('XGBoost Confusion Matrix')
plt.show()
```







The XGBoost model shows very good performance

Saving the model:

```
[ ]: # Save the model using pickle
model_path = os.path.join('models', 'XGBModel.pkl')
with open(model_path, 'wb') as file:
    pickle.dump(XGBmodel, file)
```

Step 4.2.4 : SVM

```
[ ]: from sklearn.svm import SVC
```

Training the model

```
[ ]: # Choose the important features
X_other = df[selected_features].to_numpy()

# Combine the text features with other selected features
X_combined = hstack([X_text, X_other])

# Splitting the combined dataset
X_train, X_test, y_train, y_test = train_test_split(X_combined, y, test_size=0.
↪ 2, random_state=42)

# Train an SVM model with the combined features
SVMmodel = SVC()
SVMmodel.fit(X_train, y_train)
```

```
[ ]: SVC()
```

Testing and Visualizing the DT Model's performance:

```
[ ]: # Evaluate the model
y_pred = SVMmodel.predict(X_test)

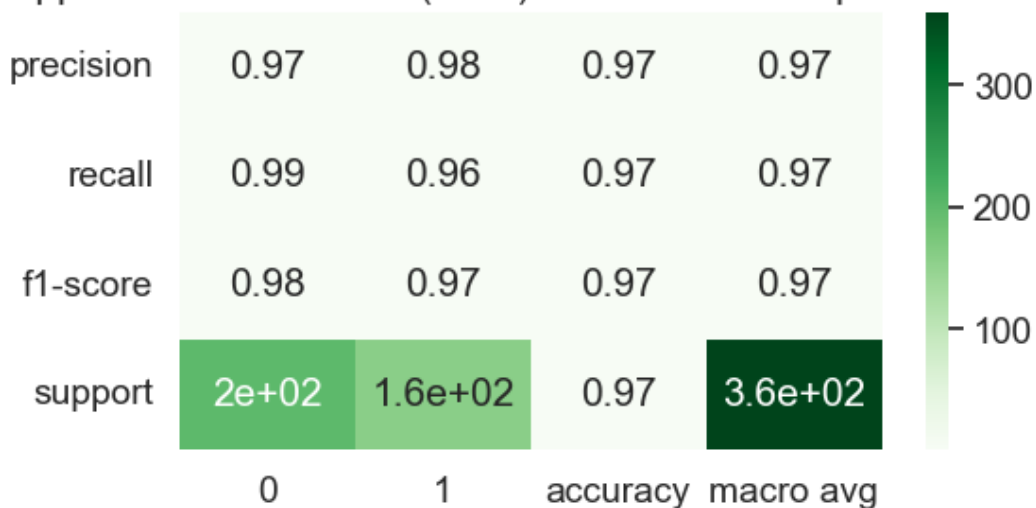
# Generate classification report
report = classification_report(y_test, y_pred, output_dict=True)

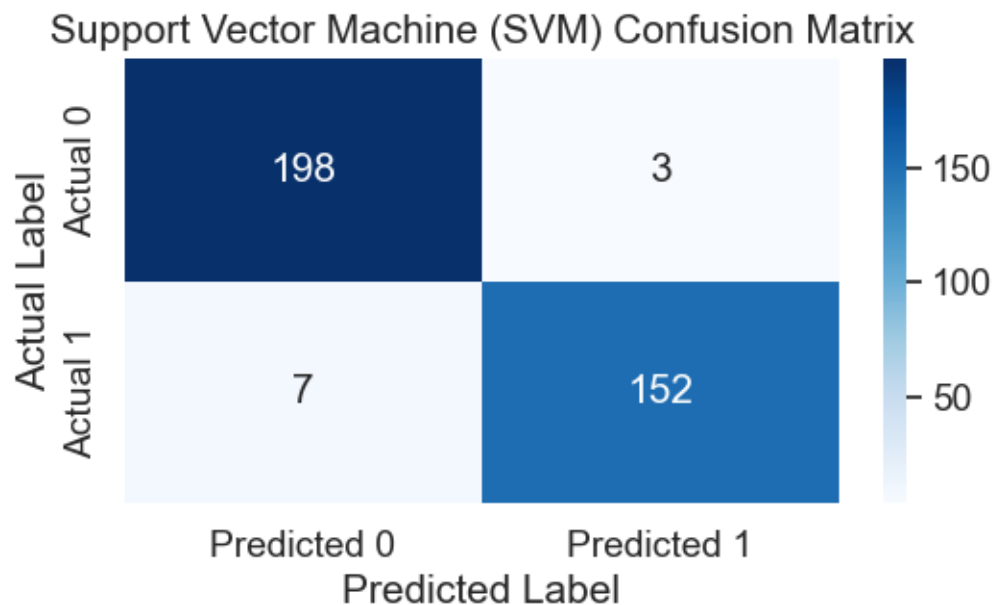
# Convert report to pandas DataFrame
report_df = pd.DataFrame(report).transpose()

# Plotting the classification report heatmap
plt.figure()
sns.heatmap(report_df.iloc[:-1, :].T, annot=True, cmap='Greens')
plt.title('Support Vector Machine (SVM) Classification Report Heatmap')
plt.xticks(rotation=0)
plt.show()

# Calculate and display the confusion matrix
cm = confusion_matrix(y_test, y_pred)
plt.figure()
sns.heatmap(cm, annot=True, fmt='d', cmap='Blues', xticklabels=['Predicted 0', 'Predicted 1'], yticklabels=['Actual 0', 'Actual 1'])
plt.ylabel('Actual Label')
plt.xlabel('Predicted Label')
plt.title('Support Vector Machine (SVM) Confusion Matrix')
plt.show()
```

Support Vector Machine (SVM) Classification Report Heatmap





The SVM model shows very good performance too: best so far on the traditional approaches

Saving the model:

```
[ ]: # Save the model using pickle
model_path = os.path.join('models', 'SVMModel.pkl')
with open(model_path, 'wb') as file:
    pickle.dump(SVMmodel, file)
```

**Step 4.3 : Modern Approaches** Step 4.3.1 : Deep Learning using keras and tensorflow

```
[ ]: from sklearn.preprocessing import StandardScaler
from tensorflow.keras.models import Sequential
from tensorflow.keras.layers import Dense, Dropout
```

Training the model:

```
[ ]: # Use the important features
X_other = df[selected_features].to_numpy()

# Combine the text features with other selected features
X_combined = hstack([X_text, X_other])

# Splitting the combined dataset
X_train, X_test, y_train, y_test = train_test_split(X_combined, y, test_size=0.
↪2, random_state=42)
```

```

# Standardize the features
scaler = StandardScaler(with_mean=False) # Set with_mean=False for sparse
↳matrix handling
X_train_scaled = scaler.fit_transform(X_train)
X_test_scaled = scaler.transform(X_test)

# Convert the sparse matrix to a dense matrix
X_train_dense = X_train_scaled.toarray()
X_test_dense = X_test_scaled.toarray()

# Deep Learning model
DLmodel = Sequential([
    Dense(128, activation='relu', input_shape=(X_train_dense.shape[1],)),
    Dropout(0.5),
    Dense(64, activation='relu'),
    Dropout(0.5),
    Dense(1, activation='sigmoid')
])
DLmodel.compile(optimizer='adam', loss='binary_crossentropy',
↳metrics=['accuracy'])

# Train the model
DLmodel.fit(X_train_dense, y_train, epochs=10, batch_size=32, verbose=1)

```

```

Epoch 1/10
45/45 [=====] - 1s 2ms/step - loss: 0.6048 - accuracy:
0.7465
Epoch 2/10
45/45 [=====] - 0s 2ms/step - loss: 0.2493 - accuracy:
0.9083
Epoch 3/10
45/45 [=====] - 0s 2ms/step - loss: 0.1202 - accuracy:
0.9542
Epoch 4/10
45/45 [=====] - 0s 2ms/step - loss: 0.0700 - accuracy:
0.9806
Epoch 5/10
45/45 [=====] - 0s 2ms/step - loss: 0.0619 - accuracy:
0.9792
Epoch 6/10
45/45 [=====] - 0s 2ms/step - loss: 0.0409 - accuracy:
0.9875
Epoch 7/10
45/45 [=====] - 0s 3ms/step - loss: 0.0340 - accuracy:
0.9889
Epoch 8/10

```

```

45/45 [=====] - 0s 2ms/step - loss: 0.0301 - accuracy:
0.9896
Epoch 9/10
45/45 [=====] - 0s 2ms/step - loss: 0.0370 - accuracy:
0.9917
Epoch 10/10
45/45 [=====] - 0s 2ms/step - loss: 0.0293 - accuracy:
0.9937

```

[ ]: <keras.callbacks.History at 0x298826abc40>

Testing and Visualizing the DT Model's performance:

```

[ ]: # Evaluate the model
y_pred = (DLmodel.predict(X_test_scaled) > 0.5).astype("int32")

# Classification report and confusion matrix
accuracy = accuracy_score(y_test, y_pred)
print(f"Accuracy of the Deep Learning model: {accuracy * 100:.2f}%")

report = classification_report(y_test, y_pred, output_dict=True)
report_df = pd.DataFrame(report).transpose()

plt.figure()
sns.heatmap(report_df.iloc[: -1, :].T, annot=True, cmap='Greens')
plt.title('Deep Learning Classification Report Heatmap')
plt.yticks(rotation=0)
plt.show()

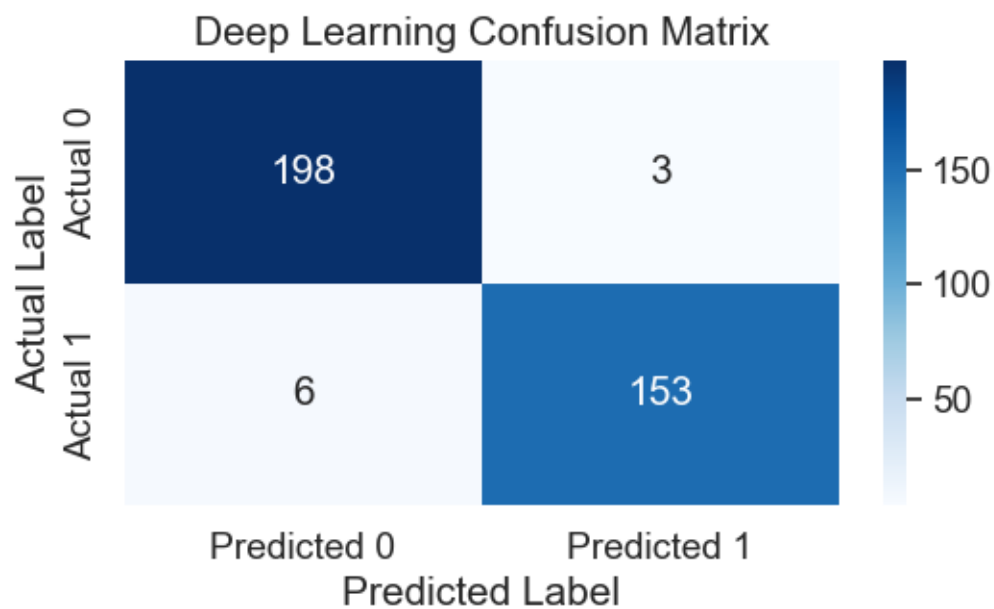
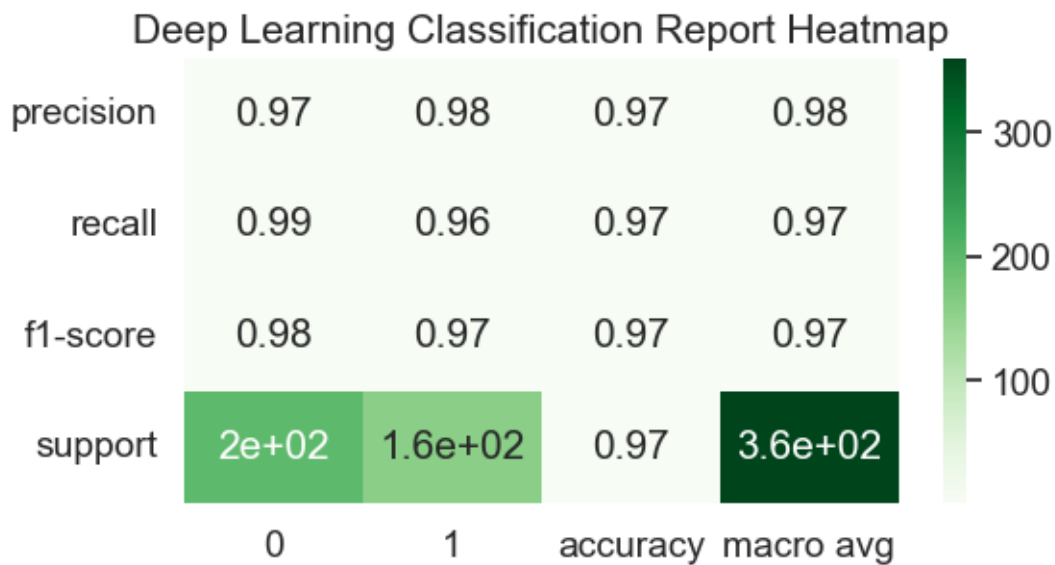
cm = confusion_matrix(y_test, y_pred)
plt.figure()
sns.heatmap(cm, annot=True, fmt='d', cmap='Blues',
            xticklabels=['Predicted 0', 'Predicted 1'],
            yticklabels=['Actual 0', 'Actual 1'])
plt.ylabel('Actual Label')
plt.xlabel('Predicted Label')
plt.title('Deep Learning Confusion Matrix')
plt.show()

```

```

12/12 [=====] - 0s 936us/step
Accuracy of the Deep Learning model: 97.50%

```



Saving the model:

```
[ ]: # Save the model
model_path = os.path.join('models', 'DLModel')
DLmodel.save(model_path)
```

INFO:tensorflow:Assets written to: models\DLModel\assets

Step 4.3.1 : Transformers - Fine-tuning BERT

Checking for GPU

```
[ ]: import tensorflow as tf

# Get the GPU device name.
device_name = tf.test.gpu_device_name()

# The device name should look like the following:
if device_name == '/device:GPU:0':
    print('Found GPU at: {}'.format(device_name))
else:
    print('GPU not found, found:')
    device_name = 'cpu'
    print(device_name)
```

GPU not found, found:

cpu

Setting the computational environment, GPU if found else CPU

```
[ ]: import torch

# If there's a GPU available...
if torch.cuda.is_available():

    # Tell PyTorch to use the GPU.
    device = torch.device("cuda")

    print('There are %d GPU(s) available.' % torch.cuda.device_count())

    print('We will use the GPU:', torch.cuda.get_device_name(0))

# If not...
else:
    print('No GPU available, using the CPU instead.')
    device = torch.device("cpu")
```

No GPU available, using the CPU instead.

Taking a quick peek at our data

```
[ ]: df.loc[df.is_question == 0].sample(5)[['text', 'is_question']]
```

```
[ ]:
```

	text	is_question
102	He cooked a delicious meal for dinner. Music h...	0
589	The painting was a masterpiece of color and em...	0
300	The speed of light is constant in vacuum ks	0
715	World War II reshaped global power dynamics si...	0
840	' " (Smarks)	0

Extracting texts and labels as numpy arrays for training

```
[ ]: # Get the lists of texts and their labels.
texts = df.text.values
labels = df.is_question.values
```

Loading our tokenizer to split text to tokens then the tokens mapped to index in the tokenizer vocab

```
[ ]: from transformers import BertTokenizer

# Load the BERT tokenizer.
print('Loading BERT tokenizer...')
tokenizer = BertTokenizer.from_pretrained('bert-base-uncased',
do_lower_case=True)
```

```
c:\Users\Hp\AppData\Local\Programs\Python\Python310\lib\site-
packages\transformers\utils\generic.py:441: UserWarning:
torch.utils._pytree._register_pytree_node is deprecated. Please use
torch.utils._pytree.register_pytree_node instead.
_torch_pytree._register_pytree_node(
```

Loading BERT tokenizer...

Using the tokenizer in one line to see the output

```
[ ]: # Print the original sentence.
print(' Original: ', texts[0])

# Print the sentence split into tokens.
print('Tokenized: ', tokenizer.tokenize(texts[0]))

# Print the sentence mapped to token ids.
print('Token IDs: ', tokenizer.convert_tokens_to_ids(tokenizer.
tokenize(texts[0])))
```

```
Original: 112. Outline the key concepts of Mathematics. (10 Marks)
Tokenized: ['112', '.', 'outline', 'the', 'key', 'concepts', 'of',
'mathematics', '.', '(', '10', 'marks', ')']
Token IDs: [11176, 1012, 12685, 1996, 3145, 8474, 1997, 5597, 1012, 1006, 2184,
6017, 1007]
```

Split all lines to tokens, add special tokens and map to their IDs

```
[ ]: # Tokenize all of the sentences and map the tokens to their word IDs.
input_ids = []

# For every sentence...
for txt in texts:
    # `encode` will:
    # (1) Tokenize the sentence.
    # (2) Prepend the `[CLS]` token to the start.
```



```

# (3) Append the `[SEP]` token to the end.
# (4) Map tokens to their IDs.
encoded_sent = tokenizer.encode(
    txt,                                     # Sentence to encode.
    add_special_tokens = True, # Add '[CLS]' and '[SEP]'

    # This function also supports truncation and conversion
    # to pytorch tensors, but we need to do padding, so we
    # can't use these features :( .
    #max_length = 128,           # Truncate all sentences.
    #return_tensors = 'pt',     # Return pytorch tensors.
)

# Add the encoded sentence to the list.
input_ids.append(encoded_sent)

# Print sentence 0, now as a list of IDs.
print('Original: ', texts[0])
print('Token IDs:', input_ids[0])

```

Original: 112. Outline the key concepts of Mathematics. (10 Marks)  
Token IDs: [101, 11176, 1012, 12685, 1996, 3145, 8474, 1997, 5597, 1012, 1006, 2184, 6017, 1007, 102]

Looking at the maximum length of our sentences for padding decision

```
[ ]: print('Max sentence length: ', max([len(ti) for ti in input_ids]))
```

Max sentence length: 122

Set the max len to 128 (greater than 122) and apply the padding

```

[ ]: # We'll borrow the `pad_sequences` utility function to do this.
from keras_preprocessing.sequence import pad_sequences

# Set the maximum sequence length.
# I've chosen 128 somewhat arbitrarily. It's slightly larger than the
# maximum training sentence length of 122...
MAX_LEN = 128

print('\nPadding/truncating all lines of text to %d values...' % MAX_LEN)

print('\nPadding token: "{:}" , ID: {:}"'.format(tokenizer.pad_token, tokenizer.
    ↪pad_token_id))

# Pad our input tokens with value 0.
# "post" indicates that we want to pad and truncate at the end of the sequence,
# as opposed to the beginning.
input_ids = pad_sequences(input_ids, maxlen=MAX_LEN, dtype="long",

```

```

        value=0, truncating="post", padding="post")

print('\nDone.')
```

Padding/truncating all lines of text to 128 values...

Padding token: "[PAD]", ID: 0

Done.

Setting the attention masks - to indicate which tokens represent words vs those that are just padding

```
[ ]: # Create attention masks
attention_masks = []

# For each sentence...
for ti in input_ids:

    # Create the attention mask.
    # - If a token ID is 0, then it's padding, set the mask to 0.
    # - If a token ID is > 0, then it's a real token, set the mask to 1.
    att_mask = [int(token_id > 0) for token_id in ti]

    # Store the attention mask for this sentence.
    attention_masks.append(att_mask)
```

Doing the 80-20 Train Test split

```
[ ]: # Use train_test_split to split our data into train and validation sets for
# training
from sklearn.model_selection import train_test_split

# Use 80% for training and 20% for validation.
train_inputs, validation_inputs, train_labels, validation_labels = \
    train_test_split(input_ids, labels,
                    random_state=42,
                    test_size=0.2)

# Do the same for the masks.
train_masks, validation_masks, _, _ = train_test_split(attention_masks, labels,
                    random_state=42, test_size=0.2)
```

Converting the numpy arrays to tensors as expected by the model

```
[ ]: # Convert all inputs and labels into torch tensors, the required datatype
# for our model.
train_inputs = torch.tensor(train_inputs).to(torch.long)
validation_inputs = torch.tensor(validation_inputs).to(torch.long)
```

```

train_labels = torch.tensor(train_labels).to(torch.long)
validation_labels = torch.tensor(validation_labels).to(torch.long)

train_masks = torch.tensor(train_masks).to(torch.long)
validation_masks = torch.tensor(validation_masks).to(torch.long)

```

Creating an iterator for our dataset to save on memory

```

[ ]: from torch.utils.data import TensorDataset, DataLoader, RandomSampler,
      ↪ SequentialSampler

# The DataLoader needs to know our batch size for training, so we specify it
# here.
# For fine-tuning BERT on a specific task, the authors recommend a batch size of
# 16 or 32.

batch_size = 32

# Create the DataLoader for our training set.
train_data = TensorDataset(train_inputs, train_masks, train_labels)
train_sampler = RandomSampler(train_data)
train_dataloader = DataLoader(train_data, sampler=train_sampler,
                              ↪ batch_size=batch_size)

# Create the DataLoader for our validation set.
validation_data = TensorDataset(validation_inputs, validation_masks,
                                ↪ validation_labels)
validation_sampler = SequentialSampler(validation_data)
validation_dataloader = DataLoader(validation_data, sampler=validation_sampler,
                                   ↪ batch_size=batch_size)

```

Loading pre-trained ‘bert-base-uncased’

```

[ ]: '''
Fine-tuning BERT for Text Classification

Now, let's fine-tune our BERT model. We do this by adding a new layer for
      ↪ classification, known as the classifier layer, to our pre-trained model.
This classifier layer will be trained on our specific task (question binary
      ↪ classification), while the rest of the BERT model will be fine-tuned.

'''

from transformers import BertForSequenceClassification, AdamW, BertConfig

# Load BertForSequenceClassification, the pretrained BERT model with a single
# linear classification layer on top.
model = BertForSequenceClassification.from_pretrained(

```

```

    "bert-base-uncased", # Use the 12-layer BERT model, with an uncased vocab.
    num_labels = 2, # The number of output labels--2 for binary classification.
                    # You can increase this for multi-class tasks.
    output_attentions = False, # Whether the model returns attentions weights.
    output_hidden_states = False, # Whether the model returns all hidden-states.
)

# Tell pytorch to run this model on the GPU.
model.cpu()

```

```

c:\Users\Hp\AppData\Local\Programs\Python\Python310\lib\site-
packages\transformers\utils\generic.py:309: UserWarning:
torch.utils._pytree._register_pytree_node is deprecated. Please use
torch.utils._pytree.register_pytree_node instead.
  _torch_pytree._register_pytree_node(
c:\Users\Hp\AppData\Local\Programs\Python\Python310\lib\site-
packages\transformers\utils\generic.py:309: UserWarning:
torch.utils._pytree._register_pytree_node is deprecated. Please use
torch.utils._pytree.register_pytree_node instead.
  _torch_pytree._register_pytree_node(
Some weights of BertForSequenceClassification were not initialized from the
model checkpoint at bert-base-uncased and are newly initialized:
['classifier.bias', 'classifier.weight']
You should probably TRAIN this model on a down-stream task to be able to use it
for predictions and inference.

```

```

[ ]: BertForSequenceClassification(
  (bert): BertModel(
    (embeddings): BertEmbeddings(
      (word_embeddings): Embedding(30522, 768, padding_idx=0)
      (position_embeddings): Embedding(512, 768)
      (token_type_embeddings): Embedding(2, 768)
      (LayerNorm): LayerNorm((768,), eps=1e-12, elementwise_affine=True)
      (dropout): Dropout(p=0.1, inplace=False)
    )
    (encoder): BertEncoder(
      (layer): ModuleList(
        (0-11): 12 x BertLayer(
          (attention): BertAttention(
            (self): BertSelfAttention(
              (query): Linear(in_features=768, out_features=768, bias=True)
              (key): Linear(in_features=768, out_features=768, bias=True)
              (value): Linear(in_features=768, out_features=768, bias=True)
              (dropout): Dropout(p=0.1, inplace=False)
            )
            (output): BertSelfOutput(
              (dense): Linear(in_features=768, out_features=768, bias=True)

```

```

        (LayerNorm): LayerNorm((768,), eps=1e-12, elementwise_affine=True)
        (dropout): Dropout(p=0.1, inplace=False)
    )
)
(intermediate): BertIntermediate(
  (dense): Linear(in_features=768, out_features=3072, bias=True)
  (intermediate_act_fn): GELUActivation()
)
(output): BertOutput(
  (dense): Linear(in_features=3072, out_features=768, bias=True)
  (LayerNorm): LayerNorm((768,), eps=1e-12, elementwise_affine=True)
  (dropout): Dropout(p=0.1, inplace=False)
)
)
)
)
(pooler): BertPooler(
  (dense): Linear(in_features=768, out_features=768, bias=True)
  (activation): Tanh()
)
)
(dropout): Dropout(p=0.1, inplace=False)
(classifier): Linear(in_features=768, out_features=2, bias=True)
)

```

Browsing all model parameters by name to understand its architecture

```

[ ]: # Get all of the model's parameters as a list of tuples.
params = list(model.named_parameters())

print('The BERT model has {:} different named parameters.\n'.
      ↪format(len(params)))

print('==== Embedding Layer ==== \n')

for p in params[0:5]:
    print("{:<55} {:>12}".format(p[0], str(tuple(p[1].size()))))

print('\n==== First Transformer ==== \n')

for p in params[5:21]:
    print("{:<55} {:>12}".format(p[0], str(tuple(p[1].size()))))

print('\n==== Output Layer ==== \n')

for p in params[-4:]:
    print("{:<55} {:>12}".format(p[0], str(tuple(p[1].size()))))

```

The BERT model has 201 different named parameters.

==== Embedding Layer ====

```
bert.embeddings.word_embeddings.weight      (30522, 768)
bert.embeddings.position_embeddings.weight  (512, 768)
bert.embeddings.token_type_embeddings.weight (2, 768)
bert.embeddings.LayerNorm.weight           (768,)
bert.embeddings.LayerNorm.bias             (768,)
```

==== First Transformer ====

```
bert.encoder.layer.0.attention.self.query.weight (768, 768)
bert.encoder.layer.0.attention.self.query.bias  (768,)
bert.encoder.layer.0.attention.self.key.weight  (768, 768)
bert.encoder.layer.0.attention.self.key.bias    (768,)
bert.encoder.layer.0.attention.self.value.weight (768, 768)
bert.encoder.layer.0.attention.self.value.bias  (768,)
bert.encoder.layer.0.attention.output.dense.weight (768, 768)
bert.encoder.layer.0.attention.output.dense.bias (768,)
bert.encoder.layer.0.attention.output.LayerNorm.weight (768,)
bert.encoder.layer.0.attention.output.LayerNorm.bias (768,)
bert.encoder.layer.0.intermediate.dense.weight (3072, 768)
bert.encoder.layer.0.intermediate.dense.bias    (3072,)
bert.encoder.layer.0.output.dense.weight        (768, 3072)
bert.encoder.layer.0.output.dense.bias          (768,)
bert.encoder.layer.0.output.LayerNorm.weight    (768,)
bert.encoder.layer.0.output.LayerNorm.bias      (768,)
```

==== Output Layer ====

```
bert.pooler.dense.weight      (768, 768)
bert.pooler.dense.bias        (768,)
classifier.weight             (2, 768)
classifier.bias                (2,)
```

Loading the optimizer and setting the recommend fine tuning values

```
[ ]: # Note: AdamW is a class from the huggingface library (as opposed to pytorch)
      # I believe the 'W' stands for 'Weight Decay fix"
      optimizer = AdamW(model.parameters(),
                          lr = 2e-5, # args.learning_rate - default is 5e-5, our
                          ↪notebook had 2e-5
                          eps = 1e-8 # args.adam_epsilon - default is 1e-8.
                          )
```

c:\Users\Hp\AppData\Local\Programs\Python\Python310\lib\site-packages\transformers\optimization.py:411: FutureWarning: This implementation of

AdamW is deprecated and will be removed in a future version. Use the PyTorch implementation `torch.optim.AdamW` instead, or set ``no_deprecation_warning=True`` to disable this warning

```
warnings.warn(
```

```
[ ]: from transformers import get_linear_schedule_with_warmup

# Number of training epochs (authors recommend between 2 and 4)
epochs = 4

# Total number of training steps is number of batches * number of epochs.
total_steps = len(train_dataloader) * epochs

# Create the learning rate scheduler.
scheduler = get_linear_schedule_with_warmup(optimizer,
                                             num_warmup_steps = 0, # Default_
                                             ↪value in run_glue.py
                                             num_training_steps = total_steps)
```

Setting a helper function to calculate the accuracy

```
[ ]: import numpy as np

# Function to calculate the accuracy of our predictions vs labels
def flat_accuracy(preds, labels):
    pred_flat = np.argmax(preds, axis=1).flatten()
    labels_flat = labels.flatten()
    return np.sum(pred_flat == labels_flat) / len(labels_flat)
```

A helper function to calculate the elapsed time

```
[ ]: import time
import datetime

def format_time(elapsed):
    '''
    Takes a time in seconds and returns a string hh:mm:ss
    '''
    # Round to the nearest second.
    elapsed_rounded = int(round((elapsed)))

    # Format as hh:mm:ss
    return str(datetime.timedelta(seconds=elapsed_rounded))
```

Training!

```
[ ]: import random

# This training code is based on the `run_glue.py` script here:
```

```

# https://github.com/huggingface/transformers/blob/5bfc0485ece086ebcbed2d008813037968a9e58/examples/run\_glue.py#L128

# Set the seed value all over the place to make this reproducible.
seed_val = 42

random.seed(seed_val)
np.random.seed(seed_val)
torch.manual_seed(seed_val)
# torch.cpu.manual_seed_all(seed_val)

# Store the average loss after each epoch so we can plot them.
loss_values = []

# For each epoch...
for epoch_i in range(0, epochs):

    # =====
    #           Training
    # =====

    # Perform one full pass over the training set.

    print("")
    print('=====Epoch {:} / {:} ====='.format(epoch_i + 1, epochs))
    print('Training...')

    # Measure how long the training epoch takes.
    t0 = time.time()

    # Reset the total loss for this epoch.
    total_loss = 0

    # Put the model into training mode. Don't be misled--the call to
    # `train` just changes the *mode*, it doesn't *perform* the training.
    # `dropout` and `batchnorm` layers behave differently during training
    # vs. test (source: https://stackoverflow.com/questions/51433378/what-does-model-train-do-in-pytorch)
    model.train()

    # For each batch of training data...
    for step, batch in enumerate(train_dataloader):

        # Progress update every 40 batches.
        if step % 40 == 0 and not step == 0:
            # Calculate elapsed time in minutes.

```



```

        elapsed = format_time(time.time() - t0)

        # Report progress.
        print(' Batch {:>5,} of {:>5,}. Elapsed: {:}.format(step,
↳len(train_dataloader), elapsed))

        # Unpack this training batch from our dataloader.
        #
        # As we unpack the batch, we'll also copy each tensor to the GPU using
↳the
        # `to` method.
        #
        # `batch` contains three pytorch tensors:
        # [0]: input ids
        # [1]: attention masks
        # [2]: labels
        b_input_ids = batch[0].to(device)
        b_input_mask = batch[1].to(device)
        b_labels = batch[2].to(device)

        # Always clear any previously calculated gradients before performing a
        # backward pass. PyTorch doesn't do this automatically because
        # accumulating the gradients is "convenient while training RNNs".
        # (source: https://stackoverflow.com/questions/48001598/
↳why-do-we-need-to-call-zero-grad-in-pytorch)
        model.zero_grad()

        # Perform a forward pass (evaluate the model on this training batch).
        # This will return the loss (rather than the model output) because we
        # have provided the `labels`.
        # The documentation for this `model` function is here:
        # https://huggingface.co/transformers/v2.2.0/model\_doc/bert.
↳html#transformers.BertForSequenceClassification
        outputs = model(b_input_ids,
                        token_type_ids=None,
                        attention_mask=b_input_mask,
                        labels=b_labels)

        # The call to `model` always returns a tuple, so we need to pull the
        # loss value out of the tuple.
        loss = outputs[0]

        # Accumulate the training loss over all of the batches so that we can

```

```

# calculate the average loss at the end. `loss` is a Tensor containing a
# single value; the `.item()` function just returns the Python value
# from the tensor.
total_loss += loss.item()

# Perform a backward pass to calculate the gradients.
loss.backward()

# Clip the norm of the gradients to 1.0.
# This is to help prevent the "exploding gradients" problem.
torch.nn.utils.clip_grad_norm_(model.parameters(), 1.0)

# Update parameters and take a step using the computed gradient.
# The optimizer dictates the "update rule"--how the parameters are
# modified based on their gradients, the learning rate, etc.
optimizer.step()

# Update the learning rate.
scheduler.step()

# Calculate the average loss over the training data.
avg_train_loss = total_loss / len(train_dataloader)

# Store the loss value for plotting the learning curve.
loss_values.append(avg_train_loss)

print("")
print(" Average training loss: {0:.2f}".format(avg_train_loss))
print(" Training epoch took: {:}".format(format_time(time.time() - t0)))

# =====
# Validation
# =====
# After the completion of each training epoch, measure our performance on
# our validation set.

print("")
print("Running Validation...")

t0 = time.time()

# Put the model in evaluation mode--the dropout layers behave differently
# during evaluation.
model.eval()

# Tracking variables
eval_loss, eval_accuracy = 0, 0

```

```

nb_eval_steps, nb_eval_examples = 0, 0

# Evaluate data for one epoch
for batch in validation_dataloader:

    # Add batch to GPU
    batch = tuple(t.to(device) for t in batch)

    # Unpack the inputs from our dataloader
    b_input_ids, b_input_mask, b_labels = batch

    # Telling the model not to compute or store gradients, saving memory and
    # speeding up validation
    with torch.no_grad():

        # Forward pass, calculate logit predictions.
        # This will return the logits rather than the loss because we have
        # not provided labels.
        # token_type_ids is the same as the "segment ids", which
        # differentiates sentence 1 and 2 in 2-sentence tasks.
        # The documentation for this `model` function is here:
        # https://huggingface.co/transformers/v2.2.0/model_doc/bert.
→html#transformers.BertForSequenceClassification
        outputs = model(b_input_ids,
                        token_type_ids=None,
                        attention_mask=b_input_mask)

        # Get the "logits" output by the model. The "logits" are the output
        # values prior to applying an activation function like the softmax.
        logits = outputs[0]

        # Move logits and labels to CPU
        logits = logits.detach().cpu().numpy()
        label_ids = b_labels.to('cpu').numpy()

        # Calculate the accuracy for this batch of test sentences.
        tmp_eval_accuracy = flat_accuracy(logits, label_ids)

        # Accumulate the total accuracy.
        eval_accuracy += tmp_eval_accuracy

        # Track the number of batches
        nb_eval_steps += 1

# Report the final accuracy for this validation run.
print(" Accuracy: {0:.2f}".format(eval_accuracy/nb_eval_steps))
print(" Validation took: {}".format(format_time(time.time() - t0)))

```

```
print("")
print("Training complete!")
```

===== Epoch 1 / 4 =====

Training...

Batch 40 of 45. Elapsed: 0:12:37.

Average training loss: 0.24

Training epoch took: 0:14:15

Running Validation...

Accuracy: 0.99

Validation took: 0:01:24

===== Epoch 2 / 4 =====

Training...

Batch 40 of 45. Elapsed: 0:12:45.

Average training loss: 0.06

Training epoch took: 0:14:20

Running Validation...

Accuracy: 0.98

Validation took: 0:01:18

===== Epoch 3 / 4 =====

Training...

Batch 40 of 45. Elapsed: 0:12:06.

Average training loss: 0.04

Training epoch took: 0:13:37

Running Validation...

Accuracy: 0.98

Validation took: 0:01:21

===== Epoch 4 / 4 =====

Training...

Batch 40 of 45. Elapsed: 0:12:04.

Average training loss: 0.03

Training epoch took: 0:13:35

Running Validation...

Accuracy: 0.98

Validation took: 0:01:21

Training complete!

Checking the loss over our batches

```
[ ]: import matplotlib.pyplot as plt
# % matplotlib inline

import seaborn as sns

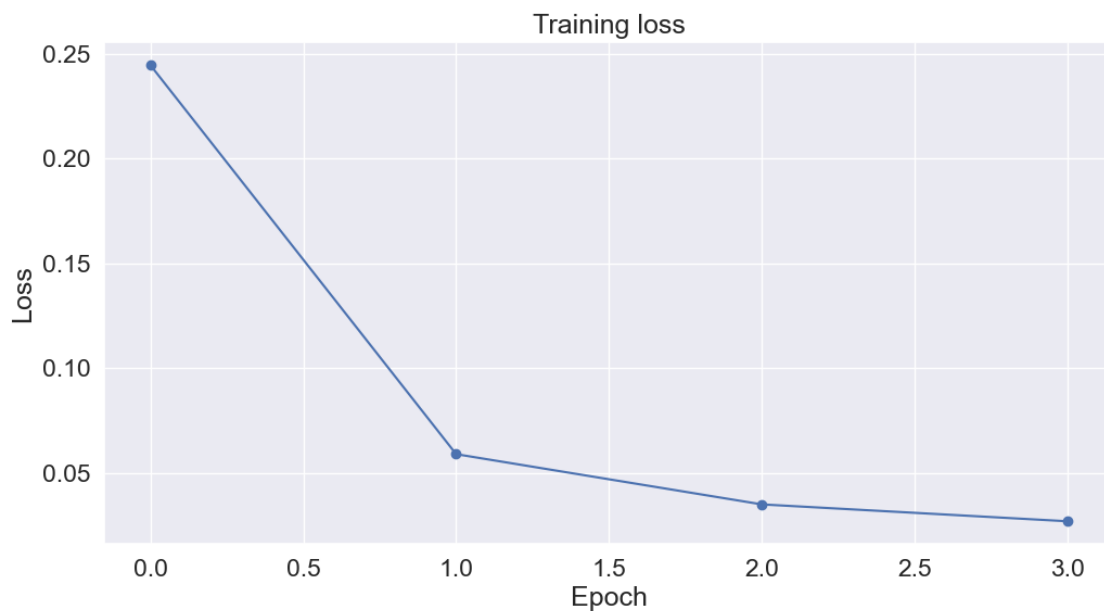
# Use plot styling from seaborn.
sns.set(style='darkgrid')

# Increase the plot size and font size.
sns.set(font_scale=1.5)
plt.rcParams["figure.figsize"] = (12,6)

# Plot the learning curve.
plt.plot(loss_values, 'b-o')

# Label the plot.
plt.title("Training loss")
plt.xlabel("Epoch")
plt.ylabel("Loss")

plt.show()
```



From the graph, The most optimum number of epochs is 1

```
[ ]: epochs = 1
```

Step 4.3.1.2 : Optimization - Retraining BERT using the optimum number of epochs

```
[ ]: import random

# This training code is based on the `run_glue.py` script here:
# https://github.com/huggingface/transformers/blob/
# 5bfcd0485ece086ebcbed2d008813037968a9e58/examples/run_glue.py#L128

# Set the seed value all over the place to make this reproducible.
seed_val = 42

random.seed(seed_val)
np.random.seed(seed_val)
torch.manual_seed(seed_val)
# torch.cpu.manual_seed_all(seed_val)

# Store the average loss after each epoch so we can plot them.
loss_values = []

# For each epoch...
for epoch_i in range(0, epochs):

    # =====
    #           Training
    # =====

    # Perform one full pass over the training set.

    print("")
    print('=====Epoch {:} / {:} ====='.format(epoch_i + 1, epochs))
    print('Training...')

    # Measure how long the training epoch takes.
    t0 = time.time()

    # Reset the total loss for this epoch.
    total_loss = 0

    # Put the model into training mode. Don't be mislead--the call to
    # `train` just changes the *mode*, it doesn't *perform* the training.
    # `dropout` and `batchnorm` layers behave differently during training
    # vs. test (source: https://stackoverflow.com/questions/51433378/
    # what-does-model-train-do-in-pytorch)
    model.train()
```

```

# For each batch of training data...
for step, batch in enumerate(train_dataloader):

    # Progress update every 40 batches.
    if step % 40 == 0 and not step == 0:
        # Calculate elapsed time in minutes.
        elapsed = format_time(time.time() - t0)

        # Report progress.
        print(' Batch {:>5,} of {:>5,}. Elapsed: {:}.'.format(step,
len(train_dataloader), elapsed))

    # Unpack this training batch from our dataloader.
    #
    # As we unpack the batch, we'll also copy each tensor to the GPU using
the
    # `to` method.
    #
    # `batch` contains three pytorch tensors:
    # [0]: input ids
    # [1]: attention masks
    # [2]: labels
    b_input_ids = batch[0].to(device)
    b_input_mask = batch[1].to(device)
    b_labels = batch[2].to(device)

    # Always clear any previously calculated gradients before performing a
    # backward pass. PyTorch doesn't do this automatically because
    # accumulating the gradients is "convenient while training RNNs".
    # (source: https://stackoverflow.com/questions/48001598/
why-do-we-need-to-call-zero-grad-in-pytorch)
    model.zero_grad()

    # Perform a forward pass (evaluate the model on this training batch).
    # This will return the loss (rather than the model output) because we
    # have provided the `labels`.
    # The documentation for this `model` function is here:
    # https://huggingface.co/transformers/v2.2.0/model_doc/bert.
html#transformers.BertForSequenceClassification
    outputs = model(b_input_ids,
                    token_type_ids=None,
                    attention_mask=b_input_mask,
                    labels=b_labels)

```

```

# The call to `model` always returns a tuple, so we need to pull the
# loss value out of the tuple.
loss = outputs[0]

# Accumulate the training loss over all of the batches so that we can
# calculate the average loss at the end. `loss` is a Tensor containing a
# single value; the `.item()` function just returns the Python value
# from the tensor.
total_loss += loss.item()

# Perform a backward pass to calculate the gradients.
loss.backward()

# Clip the norm of the gradients to 1.0.
# This is to help prevent the "exploding gradients" problem.
torch.nn.utils.clip_grad_norm_(model.parameters(), 1.0)

# Update parameters and take a step using the computed gradient.
# The optimizer dictates the "update rule"--how the parameters are
# modified based on their gradients, the learning rate, etc.
optimizer.step()

# Update the learning rate.
scheduler.step()

# Calculate the average loss over the training data.
avg_train_loss = total_loss / len(train_dataloader)

# Store the loss value for plotting the learning curve.
loss_values.append(avg_train_loss)

print("")
print("  Average training loss: {0:.2f}".format(avg_train_loss))
print("  Training epoch took: {}".format(format_time(time.time() - t0)))

# =====
#                               Validation
# =====
# After the completion of each training epoch, measure our performance on
# our validation set.

print("")
print("Running Validation...")

t0 = time.time()

```



```

# Put the model in evaluation mode--the dropout layers behave differently
# during evaluation.
model.eval()

# Tracking variables
eval_loss, eval_accuracy = 0, 0
nb_eval_steps, nb_eval_examples = 0, 0

# Evaluate data for one epoch
for batch in validation_dataloader:

    # Add batch to GPU
    batch = tuple(t.to(device) for t in batch)

    # Unpack the inputs from our dataloader
    b_input_ids, b_input_mask, b_labels = batch

    # Telling the model not to compute or store gradients, saving memory and
    # speeding up validation
    with torch.no_grad():

        # Forward pass, calculate logit predictions.
        # This will return the logits rather than the loss because we have
        # not provided labels.
        # token_type_ids is the same as the "segment ids", which
        # differentiates sentence 1 and 2 in 2-sentence tasks.
        # The documentation for this `model` function is here:
        # https://huggingface.co/transformers/v2.2.0/model_doc/bert.
        ↪html#transformers.BertForSequenceClassification
        outputs = model(b_input_ids,
                        token_type_ids=None,
                        attention_mask=b_input_mask)

    # Get the "logits" output by the model. The "logits" are the output
    # values prior to applying an activation function like the softmax.
    logits = outputs[0]

    # Move logits and labels to CPU
    logits = logits.detach().cpu().numpy()
    label_ids = b_labels.to('cpu').numpy()

    # Calculate the accuracy for this batch of test sentences.
    tmp_eval_accuracy = flat_accuracy(logits, label_ids)

    # Accumulate the total accuracy.
    eval_accuracy += tmp_eval_accuracy

```

```

        # Track the number of batches
        nb_eval_steps += 1

    # Report the final accuracy for this validation run.
    print("  Accuracy: {0:.2f}".format(eval_accuracy/nb_eval_steps))
    print("  Validation took: {:}".format(format_time(time.time() - t0)))

print("")
print("ReTraining complete!")

```

===== Epoch 1 / 1 =====

Training...

Batch 40 of 45. Elapsed: 0:16:04.

Average training loss: 0.02

Training epoch took: 0:17:53

Running Validation...

Accuracy: 0.98

Validation took: 0:01:38

ReTraining complete!

Preparing our test data:

```

[ ]: # Load the dataset into a pandas dataframe.
test_df = df.tail(400)

# Report the number of sentences.
print('Number of test lines: {:,}\n'.format(test_df.shape[0]))

# Create sentence and label lists
texts = test_df.text.values
labels = test_df.is_question.values

# Tokenize all of the sentences and map the tokens to their word IDs.
input_ids = []

# For every sentence...
for txt in texts:
    # `encode` will:
    # (1) Tokenize the sentence.
    # (2) Prepend the `[CLS]` token to the start.
    # (3) Append the `[SEP]` token to the end.
    # (4) Map tokens to their IDs.
    encoded_sent = tokenizer.encode(

```

```

        txt,                                     # Sentence to encode.
        add_special_tokens = True, # Add '[CLS]' and '[SEP]'
    )

    input_ids.append(encoded_sent)

# Pad our input tokens
input_ids = pad_sequences(input_ids, maxlen=MAX_LEN,
                          dtype="long", truncating="post", padding="post")

# Create attention masks
attention_masks = []

# Create a mask of 1s for each token followed by 0s for padding
for seq in input_ids:
    seq_mask = [float(i>0) for i in seq]
    attention_masks.append(seq_mask)

# Convert to tensors.
prediction_inputs = torch.tensor(input_ids)
prediction_masks = torch.tensor(attention_masks)
prediction_labels = torch.tensor(labels)

# Set the batch size.
batch_size = 32

# Create the DataLoader.
prediction_data = TensorDataset(prediction_inputs, prediction_masks,
                                ↪prediction_labels)
prediction_sampler = SequentialSampler(prediction_data)
prediction_dataloader = DataLoader(prediction_data, sampler=prediction_sampler,
                                   ↪batch_size=batch_size)

```

Number of test lines: 400

Applying our fine -tuned model to make predictions on the test dataset:

```

[ ]: # Prediction on test set

print('Predicting labels for {:,} test lines...'.format(len(prediction_inputs)))

# Put model in evaluation mode
model.eval()

# Tracking variables
predictions , true_labels = [], []

```

```

# Predict
for batch in prediction_dataloader:
    # Add batch to GPU
    batch = tuple(t.to(device) for t in batch)

    # Unpack the inputs from our dataloader
    b_input_ids, b_input_mask, b_labels = batch

    # Telling the model not to compute or store gradients, saving memory and
    # speeding up prediction
    with torch.no_grad():
        # Forward pass, calculate logit predictions
        outputs = model(b_input_ids, token_type_ids=None,
                        attention_mask=b_input_mask)

    logits = outputs[0]

    # Move logits and labels to CPU
    logits = logits.detach().cpu().numpy()
    label_ids = b_labels.to('cpu').numpy()

    # Store predictions and true labels
    predictions.append(logits)
    true_labels.append(label_ids)

print('    DONE.')

```

Predicting labels for 400 test lines...  
DONE.

Checking the balance of our test dataset:

```

[ ]: print('Positive samples: %d of %d (%.2f%%)' % (test_df.is_question.
↪sum(),len(test_df.is_question), (int(test_df.is_question.sum()) /
↪int(len(test_df.is_question))) * 100.0))

```

Positive samples: 189 of 400 (47.25%)

The dataset looks balanced

Using Mathews Corelation Coefficient to check accuracy

```

[ ]: from sklearn.metrics import matthews_corrcoef

matthews_set = []

# Evaluate each test batch using Matthew's correlation coefficient
print('Calculating Matthews Corr. Coef. for each batch...')

# For each input batch...

```

```

for i in range(len(true_labels)):

    # The predictions for this batch are a 2-column ndarray (one column for "0"
    # and one column for "1"). Pick the label with the highest value and turn this
    # in to a list of 0s and 1s.
    pred_labels_i = np.argmax(predictions[i], axis=1).flatten()

    # Calculate and store the coef for this batch.
    matthews = matthews_corrcoef(true_labels[i], pred_labels_i)
    matthews_set.append(matthews)

matthews_set

```

Calculating Matthews Corr. Coef. for each batch...

```

[ ]: [0.9278305692406299,
      1.0,
      1.0,
      1.0,
      1.0,
      1.0,
      1.0,
      1.0,
      1.0,
      1.0,
      1.0,
      0.9229582069908973,
      0.9379228369755696,
      1.0]

```

Using MCC for final score:

```

[ ]: # Combine the predictions for each batch into a single list of 0s and 1s.
flat_predictions = [item for sublist in predictions for item in sublist]
flat_predictions = np.argmax(flat_predictions, axis=1).flatten()

# Combine the correct labels for each batch into a single list.
flat_true_labels = [item for sublist in true_labels for item in sublist]

# Calculate the MCC
mcc = matthews_corrcoef(flat_true_labels, flat_predictions)

print('MCC: %.3f' % mcc)

```

MCC: 0.985

Visualizing the performance metrics of the fine-tuned BERT model:

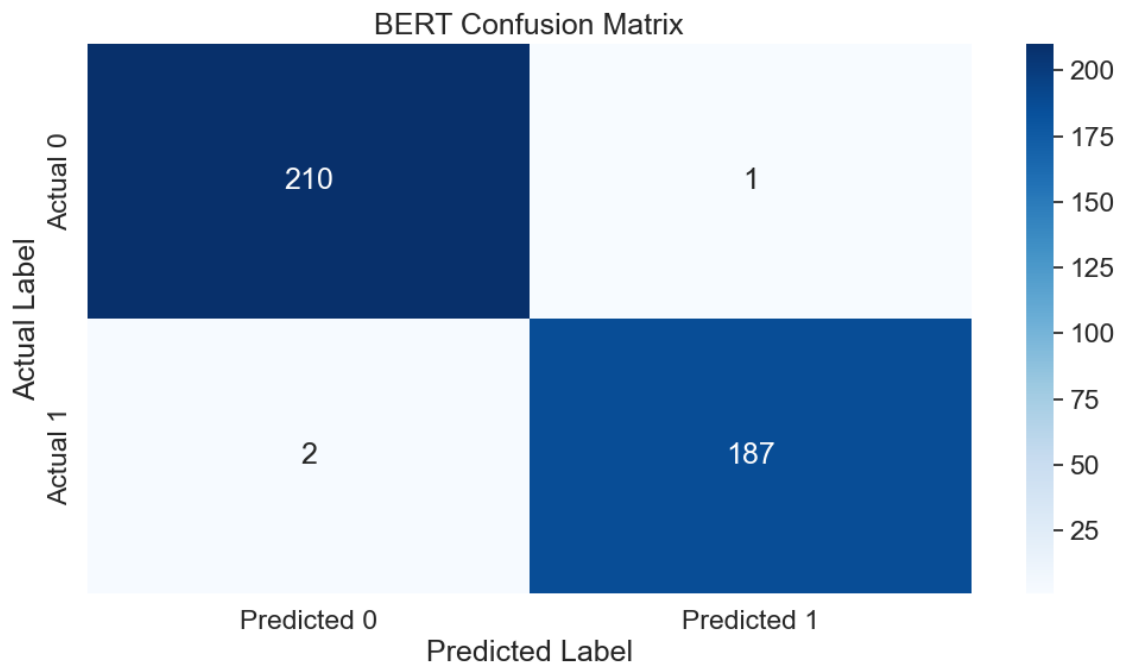
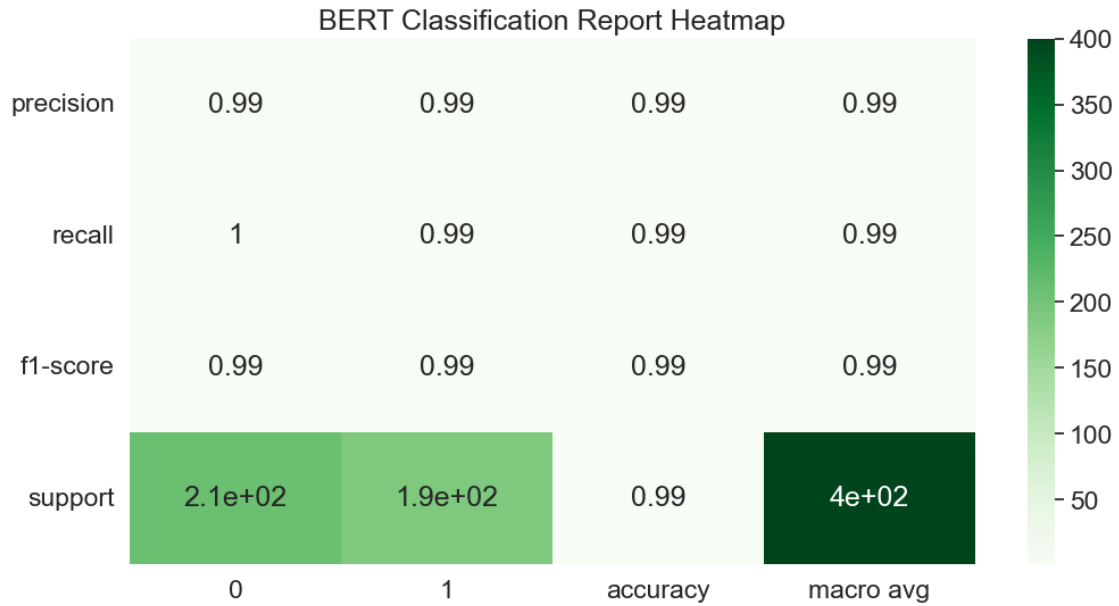
```
[ ]: # Combine predictions from each batch into a single list
flat_predictions = np.concatenate(predictions, axis=0)
flat_true_labels = np.concatenate(true_labels, axis=0)

# Convert logits to class predictions
predicted_labels = np.argmax(flat_predictions, axis=1).flatten()

### Step 2: Generate classification report
report = classification_report(flat_true_labels, predicted_labels,
    ↪output_dict=True)
report_df = pd.DataFrame(report).transpose()

### Step 3: Visualize the classification report
plt.figure()
sns.heatmap(report_df.iloc[:1, :].T, annot=True, cmap='Greens')
plt.title('BERT Classification Report Heatmap')
plt.yticks(rotation=0)
plt.show()

### Step 4: Calculate and display the confusion matrix
cm = confusion_matrix(flat_true_labels, predicted_labels)
plt.figure()
sns.heatmap(cm, annot=True, fmt='d', cmap='Blues', xticklabels=['Predicted 0',
    ↪'Predicted 1'], yticklabels=['Actual 0', 'Actual 1'])
plt.ylabel('Actual Label')
plt.xlabel('Predicted Label')
plt.title('BERT Confusion Matrix')
plt.show()
```



Saving the fine-tuned model (as a BERT directory):

```
[ ]: import os
```

```

# Saving best-practices: if you use defaults names for the model, you can
↪ reload it using from_pretrained()

output_dir = 'models/BERT'

# Create output directory if needed
if not os.path.exists(output_dir):
    os.makedirs(output_dir)

print("Saving model to %s" % output_dir)

# Save a trained model, configuration and tokenizer using `save_pretrained()`.
# They can then be reloaded using `from_pretrained()`
model_to_save = model.module if hasattr(model, 'module') else model # Take
↪ care of distributed/parallel training
model_to_save.save_pretrained(output_dir)
tokenizer.save_pretrained(output_dir)

# Good practice: save your training arguments together with the trained model
# torch.save(args, os.path.join(output_dir, 'training_args.bin'))

```

Saving model to models/BERT

```

[ ]: ('models/BERT\\tokenizer_config.json',
      'models/BERT\\special_tokens_map.json',
      'models/BERT\\vocab.txt',
      'models/BERT\\added_tokens.json')

```

Saving the fine-tuned model (as a single h5 file):

```

[ ]: from transformers import TFBertForSequenceClassification, BertTokenizer

# Assuming 'model' and 'tokenizer' are already loaded and trained in PyTorch
output_dir = 'models/BERT'
tokenizer.save_pretrained(output_dir)

# Convert PyTorch model to TensorFlow
tf_model = TFBertForSequenceClassification.from_pretrained(output_dir,
↪ from_pt=True)

# Save the TensorFlow model as an h5 file
tf_model.save_pretrained(output_dir, saved_model=True)
tf_model.save_weights(output_dir + '/h5/bert_extraction.h5')

```

All PyTorch model weights were used when initializing TFBertForSequenceClassification.

All the weights of TFBertForSequenceClassification were initialized from the PyTorch model.



If your task is similar to the task the model of the checkpoint was trained on, you can already use `TFBertForSequenceClassification` for predictions without further training.

WARNING:absl:Found untraced functions such as `embeddings_layer_call_fn`, `embeddings_layer_call_and_return_conditional_losses`, `encoder_layer_call_fn`, `encoder_layer_call_and_return_conditional_losses`, `pooler_layer_call_fn` while saving (showing 5 of 420). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: `models/BERT/saved_model\1\assets`

INFO:tensorflow:Assets written to: `models/BERT/saved_model\1\assets`

Loading back the model from local directory:

```
[ ]: # Load a trained model and vocabulary that you have fine-tuned
model = BertForSequenceClassification.from_pretrained(output_dir)
tokenizer = BertTokenizer.from_pretrained(output_dir)

# Copy the model to the GPU.
model.to(device)
```

```
[ ]: BertForSequenceClassification(
  (bert): BertModel(
    (embeddings): BertEmbeddings(
      (word_embeddings): Embedding(30522, 768, padding_idx=0)
      (position_embeddings): Embedding(512, 768)
      (token_type_embeddings): Embedding(2, 768)
      (LayerNorm): LayerNorm((768,), eps=1e-12, elementwise_affine=True)
      (dropout): Dropout(p=0.1, inplace=False)
    )
    (encoder): BertEncoder(
      (layer): ModuleList(
        (0-11): 12 x BertLayer(
          (attention): BertAttention(
            (self): BertSelfAttention(
              (query): Linear(in_features=768, out_features=768, bias=True)
              (key): Linear(in_features=768, out_features=768, bias=True)
              (value): Linear(in_features=768, out_features=768, bias=True)
              (dropout): Dropout(p=0.1, inplace=False)
            )
            (output): BertSelfOutput(
              (dense): Linear(in_features=768, out_features=768, bias=True)
              (LayerNorm): LayerNorm((768,), eps=1e-12, elementwise_affine=True)
              (dropout): Dropout(p=0.1, inplace=False)
            )
          )
        )
      )
      (intermediate): BertIntermediate(
        (dense): Linear(in_features=768, out_features=3072, bias=True)
```

```

        (intermediate_act_fn): GELUActivation()
    )
    (output): BertOutput(
      (dense): Linear(in_features=3072, out_features=768, bias=True)
      (LayerNorm): LayerNorm((768,), eps=1e-12, elementwise_affine=True)
      (dropout): Dropout(p=0.1, inplace=False)
    )
  )
)
)
(pooler): BertPooler(
  (dense): Linear(in_features=768, out_features=768, bias=True)
  (activation): Tanh()
)
(dropout): Dropout(p=0.1, inplace=False)
(classifier): Linear(in_features=768, out_features=2, bias=True)
)

```

## 0.0.8 Step 5 : Model Evaluation

### Step 5.1 : Image text preprocessing

```
[ ]: import cv2
import pytesseract
import re
import nltk
import random
```

```
[ ]: # Set the default figure size
plt.rcParams['figure.figsize'] = [6, 3]
# Configure Pytesseract path
pytesseract.pytesseract.tesseract_cmd = r'C:\Program_
Files\Tesseract-OCR\tesseract.exe'
nltk.download('punkt')
```

```
[nltk_data] Downloading package punkt to
[nltk_data] C:\Users\Hp\AppData\Roaming\nltk_data...
[nltk_data] Package punkt is already up-to-date!
```

```
[ ]: True
```

Function to return text line by line from mixed up image text corpus

```
[ ]: def prep_text(raw_text):
    # Split the raw text into lines
    lines = raw_text.split('\n')

    # Remove empty lines
```

```

lines = [line for line in lines if line.strip()]

# Initialize variables
processed_lines = []
current_line = ''

# Iterate over the lines to process them according to the specified
↳ conditions
for i in range(len(lines)):
    line = lines[i].strip()

    # Flag to determine if the current line should be joined with the next
    join_with_next = False

    # If the line does not end with ')'...'
    if not line.endswith(')'):
        # Check if the next line should be joined with the current line
        if i + 1 < len(lines):
            next_line = lines[i + 1].strip()
            # If the next line starts with a lowercase letter or doesn't
            ↳ start with a capital letter/parenthesis
            # Or if the next line is less than 11 characters and ends with
            ↳ ')'
            if (next_line and (next_line[0].islower() or not re.
            ↳ match(r'^[A-Z()]', next_line[:4]))) or \
                (len(next_line) < 16 and next_line.endswith(')')):
                current_line += line + ' ' # Join with the next line
                join_with_next = True

    # If not joining with the next line, process the current line
    if not join_with_next:
        processed_line = current_line + line
        if processed_line:
            processed_lines.append(processed_line)
            current_line = '' # Reset the current line buffer
        else:
            # Skip processing the next line as it has been joined
            continue

# Add the last line if it's not empty and has not been processed yet
if current_line:
    processed_lines.append(current_line.strip())

# Join processed lines with line breaks and return
refined_text = '\n'.join(processed_lines)
return refined_text

```

```

def split_by_list_items(text, pattern):
    parts = pattern.split(text)
    last_list_item = ''
    split_lines = []

    for part in parts:
        if pattern.match(part):
            last_list_item = part
        else:
            split_line = (last_list_item + part).strip() if last_list_item else
↪part.strip()
            if split_line:
                split_lines.append(split_line)
                last_list_item = ''

    return split_lines

```

Function to load an image, retrieve the text, preprocessing the text then output it

```

[ ]: def
↪features_from_text_line(text,selected_features=['contains_prompt_word','starts_with_prompt_
↪'indexed_start', 'lower_start', 'upper_start']):

    # Extract features using the provided function
    extracted_features = extract_attributes(text)
    #first_word, indexed_start, question_start, last_four_chars, ends_with_ks,
↪contains_ks, lower_start, upper_start, contains_prompt_word,
↪starts_with_prompt_word, single_word

    # Creating a DataFrame with the extracted features
    features_df = pd.DataFrame([extracted_features], columns=['first_word',
↪'indexed_start', 'question_start', 'last_four_chars',
↪'ends_with_ks', 'contains_ks', 'lower_start', 'upper_start',
↪'contains_prompt_word', 'starts_with_prompt_word', 'single_word'])

    # Exclude the first feature ('question') which is a string and not used in
↪the numeric model
    numeric_features = features_df[selected_features]
    # Vectorize the line text
    line_vectorized = vectorizer.transform([text])

    # Combine vectorized text with other features
    combined_features = hstack([line_vectorized, np.array(numeric_features).
↪reshape(1, -1)])

    return combined_features

```

**Step 5.2 : Evaluation using real question paper's corpus** Load the question paper image, extract, format and print text

```
[ ]: # Read the image
images = ['images/test.jpg', 'images/IMG_1904.jpg', 'images/questions/1.
↵jpg', 'images/questions/2.jpg', 'images/questions/3.jpg', 'images/questions/4.
↵jpg', 'images/questions/5.jpg', 'images/questions/6.jpg', 'images/questions/7.
↵jpg', 'images/questions/8.jpg', 'images/questions/9.jpg', 'images/questions/10.
↵jpg', 'images/questions/11.jpg', 'images/questions/12.jpg', 'images/questions/
↵13.jpg', 'images/questions/14.jpg', 'images/questions/15.jpg', 'images/
↵questions/16.jpg', 'images/questions/17.jpg', 'images/questions/18.
↵jpg', 'images/questions/19.jpg', 'images/questions/20.jpg']
image_path = 'images/test.jpg'

ocr_text = ''

for paper_img in images:
    image = cv2.imread(paper_img)
    gray = cv2.cvtColor(image, cv2.COLOR_BGR2GRAY)
    new_text = pytesseract.image_to_string(gray)
    ocr_text += new_text + '\n'

refined = prep_text(ocr_text)
print(refined)
```

DSA 8105: FUNDAMENTAL CONCEPTS IN a

DATE: 6% September 2021

Instructions

Ibs This examination consists of FIVE questions. 2s Answer Question ONE

(COMPULSORY) and any other Two ques e

QUESTION ONE (20 MARKS)

(a) For each of the following scenarios, use a supply and demand diagram to illustrate the effect of a given shock on the equilibrium price and quantity u in the specified competitive market. Explain whether there is a shift in the demand curve, the supply, or neither i) An unexpected temporary heat wave hits the South Coast. Show the effect in the ice cream market in Mombasa. (3 Marks)

ii) The government introduces a tax on ice cream which is paid by producers.

What is the effect in the ice cream market? (3 Marks)

for crude oil in country H has been estimated to be -0.06

(b) The price elasticity of demand \_0.45 in the long run. Why would the demand for crude oil be price in the short-run and (3 Marks)

elastic in the long run than in the short run? Briefly explain.

(c) Briefly explain why a supply shock leads to stagflation. (3 Marks)

n economic efficiency and

(d) In the context of financial markets, distinguish betwee informational efficiency. (4 Marks)

Page 1 of 3

Strathmore

UNIVERSITY  
STRATHMORE INSTITUTE OF MATHEMATICAL SCIENCES  
MASTER OF SCIENCE IN DATA SCIENCE AND ANALYTICS  
END OF SEMESTER EXAMINATION

DSA 8304 Risk Management Analytics

Time: 2.5 Hours

DATE: 17" July 2022

Instructions &

Dy

This examination consists of FIVE questions.

Answer Question ONE (COMPULSORY) and any other TWO questions.

Question 1 (30 Marks)

1p

Examine the importance of data quality in risk analytics, discuss the potential impact of incomplete or incorrect data on risk prediction models, and propose strategies for mitigating these issues. (4 marks)

. Analyze the 2 limitations of different machine learning algorithms (such as decision trees, neural networks, and support vector machines) in predicting credit default risk (4 marks)

Besides its involvement in stress testing, analyze three other ways that the risk committee is able to influence risk culture and capabilities in an organization. Provide examples of recent corporate governance scenarios where the risk committee has played a pivotal role in fostering an effective risk culture. (6 Marks)

Critically assess the benefits and criticisms of regulatory frameworks for banks and insurance companies. Use contemporary examples to illustrate your points and focus on the effects of recent changes in regulatory expectations, such as the increased focus on individual accountability and documentation. (8 marks)

"Risk identification forms the foundation of comprehensive risk management. Given the evolution of risks in the modern global context, including technological, environmental, and geopolitical risks, traditional risk identification methods may need to be supplemented or rethought."

Page 1 of 4 (7 marks)

© 4-1) Identify seven reasons why man is consider' naa (emote . fall o! J ie Biblical apie? eee ay, (6 marks)

b) State six causes of sin from y. «) Wdentify ways in which Christian (7 marks) or in EgyPt strate his power in he hey were in the desert (8 marks)

rshipped God when tt faster (5 marks)

2a) Name seven plagues that God used to de b) Identify eigh ) Give the similarities between the Jewish Passover an t ways in which the Israelites wo! id Christians i (7 marks)

3 a) Give.seven ways in which Elijah succeeded as a Prophet of God. 5) Outline the conditions that made it difficult for Prophet Elijah to stop idolatry 1" Israel (7 marks)

c) Identify six ways in which Christians enhance the true worship of God today (6 mark)

diay One y Par ofl Md ; . - 4a) Explain the | teachings of prophet Amos on Israel election. (7 marks)

b) State six ways in which God would punish Israel for her evils according to Amos. (6 marks)

Lessons Christians learn from Israel's election. (6 marks)

' " (5 marks)

(7 marks)

to handle cases of dishonesty. (8 marks)

-

Gat Gof veuy : aes ssf ? © marks)

Geittns (5 marks)

(©) Give five reasons why Christians go to church of announced his

(b) Outline what Angel Gabriel revealed about John the Baptist when he (7 marks)  
birth to Zachariah (8 marks)

2. (a) Explain the healing of the paralytic in Luke 5:18-26 (7 marks)

(b) List seven expectations of the Jews concerning the Messiah ( 0 Ss

(6) In what ways are Christians preparing for the coming of the Messiah (6 marks)

3: (©) Give six reasons that the Jewish leaders had to have Jesus arrested and even executed (6 marks)

(b) State 8 extra-ordinary things that took place at the time of Jesus crucified/execution (8 marks)

(c) State six problems that Christian today encounter while trying to practice their faith (6 marks)

(b) Narrate Peter's message on the day of Pentecost (8 marks)

(c) Give reasons why people abuse alcohol and other drugs today (5 marks)

5. (a) State the role of the Holy Spirit as taught by Jesus (8 marks)

(b) State Any Seven characteristics of Love (7 marks)

(C) List any 5 gifts of the Holy Spirit (5 marks)

6, (a) Explain the analogy of the People of God as used (0 express the unity of believers (7 marks)

(b) What are the causes of disunity in the church today? (6 marks)

m|

(c) How is the unity of believers expressed in the church today (7 marks)  
marks)

t

HYeqjeme AH Abell. | \

A/ Be ee (25 MARKS)

Define Constituti inswer All questions in this Section. 2. Identify the Monarchy as a form of government. (1 mark)

A. Which is the place where the remains of Kenyapitheus were discovered in Kenya: (2 marks)

A. State two advantages (factors) obtained from the Kenyan coast during the long distance trade, (2 marks)

2. Discuss how the government may limit one's freedom of movement in Kenya. (1 mark)

people (2 marks)

Government consented (1 mark)

State two organs exercised in Kenya. (2 marks)

40. Give a treaty which marked the colonial sphere of influence in East Africa in 1886. (1 mark)

1. Give two reasons why the British used indirect rule in some parts of Kenya (2-marks)

2. Give two features of the political organizations which were formed in Kenya before 1939. (2 marks)

3. Give one special court in Kenya. (1 mark)

4. Beside unity, name the other pillar of Nyayoism. (1 mark)

5. Identify two education commissions in Kenya since independence. (2:marks) (1 mark)

6. Outline one function of the speaker of the County Assembly

7. State two types of government expenditure in Kenya. (2 marks)

SECTION B: (45 MARKS)

8. Answer Any three questions in this Section. of the Luo from their original homeland into Kenya. (5 marks)

9. a) Give five reasons for the migration of the Somali in Kenya during the pre-colonial period. (10 marks)

b) Describe the political organization of the Luo (3 marks)

10. a) State three factors which enabled the Arabs to sail from Oman to the Kenyan Coast. (12 marks)

b) Explain six effects of long distance trade on the people of Kenya

11. a) State five terms of the Devonshire White Paper of 1923. (5 marks)

b) Explain five problems faced by Africans in Urban Centres during the colonial period. (10 marks)

12. a) Give five features of African Socialism in Kenya. (5 marks)

b) Explain five factors that have influenced industrialization in Kenya since independence. (10 marks)

c) Explain five factors that have influenced industrialization in Kenya since independence. (10 marks)

13. Answer Any Two questions from this section. A person should meet to qualify to be a citizen by birth in Kenya. (6 marks)

14. a) Give three conditions for citizenship (12 marks)

b) Explain six features of the Constitution of Kenya (2010)

15. a) Outline the composition of the County Executive Committee, (6 marks)

b) Describe the law making process at the National level in Kenya. (12 marks) (5 marks)

16. a) State five objectives of Devolution. b) Explain five ways in which the government of Kenya ensures effective utilization of public funds. (10 marks)

17. Maseno School Mock Committee 2023

Strathmore

UNIVERSITY

STRATHMORE INSTITUTE OF MATHEMATICAL SCIENCES

MASTER OF SCIENCE IN DATA SCIENCE AND ANALYTICS

END OF SEMESTER EXAMINATION

DSA 8304 Risk Management Analytics

Time: 2.5 Hours

DATE: 17" July 2022

Instructions &

Dy

This examination consists of FIVE questions.



Answer Question ONE (COMPULSORY) and any other TWO questions.

Question 1 (30 Marks)

1p

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. Analyze the 2 limitations of different machine learning algorithms (such as decision trees, neural networks, and support vector machines) in predicting credit default risk (4 marks)

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Critically assess the benefits and criticisms of regulatory frameworks for banks and insurance companies. Use contemporary examples to illustrate your points and focus on the effects of recent changes in regulatory expectations, such as the increased focus on individual accountability and documentation. (8 marks)

"Risk identification forms the foundation of comprehensive risk management. Given the evolution of risks in the modern global context, including technological, environmental, and geopolitical risks, traditional risk identification methods may need to be supplemented or rethought."

Page 1 of 4

DSA 8105: FUNDAMENTAL CONCEPTS IN a

DATE: 6% September 2021

Instructions

Ibs This examination consists of FIVE questions. 2s Answer Question ONE (COMPULSORY) and any other Two ques e

QUESTION ONE (20 MARKS)

(a) For each of the following scenarios, use a supply and demand diagram to illustrate the effect of a given shock on the equilibrium price and quantity u in the specified competitive market. Explain whether there is a shift in the demand curve, the supply, or neither i) An unexpected temporary heat wave hits the South Coast. Show the effect in the ice cream market in Mombasa. (3 Marks)

ii) The government introduces a tax on ice cream which is paid by producers.

What is the effect in the ice cream market? (3 Marks)

for crude oil in country H has been estimated to be  $-0.06$

(b) The price elasticity of demand  $-0.45$  in the long run. Why would the demand for crude oil be price in the short-run and (3 Marks)

elastic in the long run than in the short run? Briefly explain.

(c) Briefly explain why a supply shock leads to stagflation. (3 Marks)

n economic efficiency and

(d) In the context of financial markets, distinguish betwee informational efficiency. (4 Marks)

Page 1 of 3

STRATHMORE UNIVERSITY

STRATHMORE INSTITUTE OF MATHEMATICAL SCIENCES

MASTER OF SCIENCE IN DATA SCIENCE AND ANALYTICS

END OF SEMESTER EXAMINATION

DSA 8105: FUNDAMENTAL CONCEPTS IN FINANCE AND ECONOMICS

Date: 4<sup>o</sup> October, 2022 Time: 3 hours

Instructions

Attempt any Four (4) questions

Question 1

(a) Suppose Kisumu can produce 120 million bushels of wheat if it uses all of its productive resources in the wheat industry, or 80 million yards of cloth if it uses all of its resources in the cloth industry. Use a diagram to illustrate your answers to the following questions. Label the diagram and explain in words.

(i) Assuming constant opportunity costs, draw Kisumu's production-possibility curve.

(Place wheat on the x-axis) {2 marks}

(ii) Suppose Kisumu's consumers choose to consume 70 million bushels of wheat. How much cloth will Kisumu then be able to produce? {2 mark}

(iii) What is the true price of a bushel of wheat in Kisumu? (2 marks)

(iv) Can Kisumu produce 60 million bushels of wheat and 50 million yards of cloth?

If so why? {2 marks}

(b) If you buy 100 shares of East African Breweries stock

(i) To what are you entitled? {3 marks}

(ii) What is the most money you can make on this investment over the next year? {2 marks}

(iii) If you paid KES180 per share, what is the most money you could lose over the year? {2 marks} [15 marks]

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ME. |> OlCa Ss ign eauite 6.19. P.O. siete AR r. ANSWER ALL Got aaa (ene + a) Relate ¶| at re message of Peter on the Day of Pentecost. (10 Marks)

b) In what ways did the coming of the Holy Spirit transform the life of Peter on the Day of Pentecost? (5 Marks)

c) What activities of the church in Kenya show that the Holy Spirit is working among them? (5 Marks)

2a) From the teachings of Jesus, what role would the Holy Spirit play? (8 Marks)

b) Describe the fruits of the Holy Spirit according to Galatians 5:22-26. (6 Marks)

c) In what ways do Christians demonstrate the fruit of generosity? (6 Marks)

3a) Explain how the unity of believers is expressed in the symbol of the body of Christ. (7 Marks)

b) State teachings of Peter concerning the people of God. (1\* Peter 2:9- 10) (7 Marks)

c) How do churches discipline those who cause disunity in the church today? (6 Marks)

a) According to Isaiah's prophecy state the names given to the Messiah, and b) How did Jesus fulfill Isaiah's prophecy of the suffering servant? c) How should Christians respond to those who are opposing them? (8 mks)

a) Outline the role of John the Baptist. (7 mks)

b) State the lessons that Christians learn from the annunciation of the birth of John the Baptist. (7:mks)

c) State the reasons: why Jesus was baptized yet he was sinless. (6 mks)

oy a) Narrate the transfiguration of Jesus. (8 mks)

b) List the occasions when Jesus was tempted. (6 mks)

¢) Outline the reasons why Christians should repent their sins. (6 mks)

4, S a) Describe the parable of the Sower. (8 mks)

b) Why did Jesus use parables in his teachings: (6 mks)

¢) Outline the lessons that Christians learn from the above parable. (6mks)

S . a) List the fruits of the Holy Spirit as taught by St. Paul (7 mks)

b) Describe the events that took place on the day of pentacost (7 mks)

¢) Describe how the unity of believers is expressed in the image of the vine and the branches.(John 15: 1-10) (7 mks)

+ sistand2 (6mks)

ae y ne' lical stories of creation it in Biblical creation ies given to human beings by (a mks)

F 6 mks)

Kenya take care of the environment ( (8 mks)

a) Describe the call of Abraham. mks)

b) Explain the characteristics of a covenant. eras)

¢) Identify seven examples of covenants made in Kenya today (7m 3. a) Give five reasons why Israelites demanded for a king. (5 mks)

b) What lessons can modern political leaders learn from king David. (8 mks)

¢) How do Christians in Kenya demonstrate their faith in God? (7 mks)

4. a) State four differences between traditional African prophets and the Old Testament prophets. 5: (8 mks)

(6 mks)

b) Outline the social injustices condemned by prophet Amos in Israel.

In what ways is the church in Kenya promoting justice in society? (6 mks)

c)

Re, a) With reference to the teaching of prophet Jeremiah on judgement , State six ways in which God would punish the people of Judah. (6 mks)

b) In what ways did prophet Jeremiah suffer while carrying out his workin Judah. (6 mks)

c) List eight moral values that Christians can acquire from the life of prophet Jeremiah. (8 mks)

6. a) List eight places used for worship in Traditional African communities. (8 mks)

b) Give six reasons why sacrifices were made in Traditional African communities. (6 mks)

c) How do Christians in Kenya show respect for places of worship? (6 mks)

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DARY SCHOOL, \.

CRE. FORM 4 dias

TERM 1, MID TERM EXAM

Paper 2,

NAME pei AMIE NMED Eliseo srssresite ADM NOW ARS iovevsvesere

STRU IONS, : 1. State the Jewish expectation concerning the Messiah, (6mks)

b) Describe the events that were associated with the birth of John the Baptist, (Bmks)

©) Give reasons why the birth of a child is celebrated in modern society, (6mks)

2. a) Describe the transfiguration of Jesus as recorded in Luke 9:28 - 37, " (4mks)

b) Outline the instructions that Jesus gave the twelve disciples when he commissioned them

Luke 9:51 -9, (7mks)

c) Give reasons why disciples are called today. (5mks)

Identify areas of conflicts between Jesus and the Jewish leaders which eventually led to the crucifixion (6mks)

(were the reactions of the people who witnessed Jesus crucifixion, (7mks)

Significance of passion, death and resurrection of Jesus to Christians today. -

the teaching of Jesus on the vine and branches, (7mks)

five ways in which the Holy spirit manifested himself on the day of Pentecost.

[are the reasons why some Christians live in Christianity today, (8mks)

(8mks)

(6mks)

causes of conflict between parents and children in the contemporary society?

(6mks)

(6mks)

(6mks)

ST, MARKS KISERIAN MI 3a

TERM 1 2024

SECTION S4 (25MK 1 17,

XED DAY SECONDARY SCHOOL

NDNA Teun NANG aaa po aey EN c

Min: -TERMEN ERNMENT PAPER 2 iby Me "wc 'Gentity any two classifications of written sources of information on History and

Government. (2marks)

Give one social activity that was practiced by a man during the New Stone Age period, (1mark)

State two effects of the Land Enclosure System in Britain during the Agrarian Revolution. . (2marks)

Highlight two negative effects of the trans-Saharan trade, (marks)

Name the first woman astronaut to travel into space. (1mark) 2

State two importance's of the radio as a form of communication. (2marks)

Give two ways how scientific inventions have negatively impacted on Agriculture. (2marks)

What was the title given to the highest political and religious leader of the Shona? (1mark)

Identify one chartered company that was used by the Europeans to acquire colonies in

Africa. (1marks)

State one way how the Lochner treaty benefited King Lewanika individually.

(1mark)

- Outline one social factor that led to the rise of Nationalism in Africa.

(1mark)

2. State one military alliance that was formed by European nations before the First World War. (1mark)

- Name two permanent member states of the United Nations Security Council.

(2marks)

State one way how the Cold War was witnessed in Africa. (1mark)

Name two military alliances which were formed during the cold war. (2marks)

. Outline two reasons why United States of America did not join the First World War until 1917. (2marks)

Name the event that marked the end of Second World Wars. (1mark)

Question 5

(a) Suppose that you have the following investment plans 1) You deposit KES10,000 every end of the year for next 10 years

II) You deposit KES10,000 at the beginning of every year for the next 10 years

Which plan would you go for and why given that the investment earns 7.5% semi-annually? {7 marks}

(b) Table 3 shows the quantity and price of bread and butter produced in country Z between 2009 and 2013. Table 3: Price and quantity of bread and butter produced in country Z that only bread here applicable):

GDP {2 marks} and 2013 {2 marks} marks} j [15 marks]

TECHNICAL UNIVERSITY OF KENYA

FACULTY OF APPLIED SCIENCES AND TECHNOLOGY

SCHOOL OF COMPUTING AND INFORMATION TECHNOLOGY

SPECIAL/SUPPLEMENTARY EXAMS 2020/2021 FOR FIRST YEAR EXAMINATIONS FOR

DIPLOMA OF TECHNOLOGY IN COMPUTER TECHNOLOGY

DIPLOMA OF TECHNOLOGY IN INFORMATION TECHNOLOGY

ECSE 1206 / ECIE 1206: Principles of Database Management Systems

TIME: 2 Hours 2021 a

Strathmore UNIVERSITY

STRATHMORE INSTITUTE OF MATHEMATICAL SCIENCES

MASTER OF SCIENCE IN DATA SCIENCE AND ANALYTICS

END OF SEMESTER EXAMINATION

DSA 8304 Risk Management Analytics

Time: 2.5 Hours a e e e y

Question [.

Bis peptic Rb "examine the incomplete or its involvement in stress" affluence risk culture and capabilities in an organization. Provide examples of recent governance scenarios where the risk committee has played a pivotal role in 0 bn

ong! aren se < CeCctlve rs! k culture. temporary € hee

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Strathmore

UNIVERSITY

STRATHMORE INSTITUTE OF MATHEMATICAL SCIENCES (SIMS)

MASTER OF SCIENCE IN DATA SCIENCE AND ANALYTICS

END OF SEMESTER EXAMINATION

DSA 8105: FUNDAMENTAL CONCEPTS IN FINANCE AND ECONOMICS 6 September 2021 Time: 3 Hours ice cream market in Mombasa. \_ G Marks)

Briefly explain. (3 Marks)

(3 Marks)

(4 Marks)

Strathmore

UNIVERSITY

OF MATHEMATICAL SCIENCES

OF SEMESTER EXAMINATION

ADDITIONAL TECHNIQUES IN DATA SCIENCE

Time: 3 Hours questions and an appendix to one of the questions.

QUESTION ONE (3 Marks)

1. How it differs from the Newton-Raphson (3 Marks)

2. The value of the root of the function  $f(x) =$

3. R code that you would use to solve this (6 Marks)

4. Thematically) how you would generate  $f(0) = \exp(-0y)$ , and further numbers from this distribution. / 7 (8 Marks)

ye

DSA 8105: FUNDAMENTAL CONCEPTS IN FINANCE AND ECONOMICS

October, 2022 Time: 3 hours ----- / any

Bi 80: million yards of cloth if it uses all of diagram to illustrate your answers to the 1] 1 be able to produce? ie mark} yet heat i in Kisumu? (2 eS)

[15 marks]

SECTION A: Attempt ALL questions in this section

QUESTION ONE a. State and explain THREE indirect modes of transmission of communicable diseases [3Mks] \_ Highlight THREE levels of prevention of communicable diseases [3Mks]

(i) State FOUR importance of personal hygiene [4Mks]

(ii) State and explain any FIVE ways by which alcohol use raises the risk of cancer [6Mks] d. (i) State FOUR importance of personal hygiene x [4Mks]

(ii) State and explain any FIVE methods of Prevention and Control of HIV/AIDS [10Mks]

SECTION B: Answer any TWO questions in this section

QUESTION TWO

(a) State and explain any TEN factors that affect malaria transmission [10Mks]

(b) Describe any FIVE malaria prevention and control strategies [10Mks]

QUESTION THREE

(a) Giving examples for each, classify the SEX known addictive drugs and their mode of intake [10Mks]

(b) State and explain FIVE ways by which alcohol decreases resistance to HIV Infection [10Mks]

QUESTION FOUR

(a) Describe FIVE Goals of Antiretroviral therapy in HIV/AIDS treatments [10Mks]

(b) Discuss FIVE ways of positive living with HIV/AIDS [10Mks] lifestyle factors that contribute to many of such health problems? [10Mks]

5. How many deaths from lifestyle diseases occur in low- and middle-

6. Explain this scenario using five reasons? [10Mks]

QUESTION ONE (30 MARKS)-COMPULSORY a). Explain the following programming tools

used in program development:- \. Language translators ii Unker ii. IDE iv. Loader (4 Marks)

b). Explain the following System development life cycle stages in program development. (6 Marks)

i. Feasibility study ii. System investigation ili, System design

Cc). Differentiate between pseudo code and a flowchart. (2 Marks)

(. Using a in a pseudo code and a flowchart, write a solution of a problem to calculate the area of a circle using the formula  $\text{area} = J) r^{\circ}$ , where  $J\text{I}=3.14$  and  $r$  is radius. (6 Marks)

wr, a structured program that calculates the area of a circle using the formula  $\text{area} = r?$ , where  $J\text{I}=3.14$

D andris rads. (6 Marks f). Differentiate between structured programming and modular programming. (4 Marks)

g). Outiine any two benefits of structured programming. (2 Marks)

in the following principles used in programming: (4 Marks)

[in programming, giving an illustration using a flowchart for each. ia (6 Marks)

QUESTION 1 [30 MARKS] COMPULSORY a) Explain the two types of functions used in C program, giving an example of each. (4 Marks)

b) Write a program in C programming language that allows a user to input a whole number of  $X$  in main program and uses two user defined functions name, square() to compute the square of the number  $X$  and cube() to compute the cube of  $X$ , then veer the  $X$ , result of the square and cube in the main program. Use if() to select each subprogram at a time to execute. ; (10 Marks)

c) Explain the program structure of a C program, giving relevant examples using the program in Q1 (b). (5 Marks)

d) Differentiate between an array, a record, a pointer and a file, then write a C program that implements an array, a record and a file using a structure (record) consisting of itemname and itemcode to store data of 20 items in a retail shop computer and displays a list of the 20 items details reading from file. Given that item name is a string of 25 characters, item code is a number of 4 digits, record name is item, logical file is itemfile, and physical file is "C:\item\itemf.dat'. (11 Marks)

QUESTION 2 [20 MARKS] a) Explain the three concepts used in structured programming. (9 Marks)

b) Write a C program that that has three subprograms, first subprogram to input a list of 18 customers names as string and ; deposit as number with decimal point, second subprogram to compute sum of the deposit of all customers and third ubprogram to display the list the 18 customers names and deposit, and sum of deposits. (11 Marks)

sed in structured programming. (9 Marks)

(0) , npute the area of acircle and to compute perimeter of a circle, (11. Marks)

(4 Marks)

"Paul" and "John" respectively, Explain the following (8 marks)

; name, idumber, and course and then (8 Marks)

(5 Marks)

(9 Marks)

(6 Marks)

Using the Logistic Regression model to predict, then printing the results

```
[ ]: text = []
all_questions = []

for line in refined.split('\n'):
    if not line.strip(): # Skip empty lines
        continue

    # Generate features from the line
    features = features_from_text_line(line) # Ensure you have this function
    ↪defined

    # Predict the label probabilities using Logistic Regression model
    probabilities = LRmodel.predict_proba(features)[0]
    predicted_label = 1 if probabilities[1] >= 0.5 else 0 # Assuming class 1
    ↪is the 'positive' class

    # Store the text, predicted label, and confidence for class 1
    text.append({
        'text': line,
        'label': predicted_label,
        'confidence': probabilities[1] # Confidence score for class 1
    })

    # Append to all_questions if it's a question
    if predicted_label == 1:
        all_questions.append(line)

# Convert list of dictionaries to DataFrame
df = pd.DataFrame(text)

# Save to CSV, excluding the index
df.to_csv('predictions/LRmodel.csv', index=False, columns=['text', 'label',
    ↪'confidence'])

# Output the results
print("\n-----OUTPUT-----")
for t in text:
    print(t)

print("\n-----EXTRACTED QUESTIONS-----")
for q in all_questions:
    print(q)

print("\n----- " + str(len(all_questions)) + " questions, extracted from
    ↪" + str(len(text)) + " lines -----")
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{'text': 'Page 1 of 4 (7 marks)', 'label': 0, 'confidence': 0.2913778969231999}

{'text': '© 4-1) Identify seven reasons why man is consider' naa (emote . fall o! J ie Biblical apie? eee ay, (6 marks)', 'label': 1, 'confidence': 0.9449152621783986}

{'text': 'b) State six causes of sin from y. «) Wdentify ways in which Christian (7 marks)', 'label': 1, 'confidence': 0.9818198598896017}

{'text': 'or in EgyPt strate his power in he hey were in the desert (8 marks)', 'label': 1, 'confidence': 0.8382065251017806}

{'text': 'rshipped God when tt faster (5 marks)', 'label': 1, 'confidence': 0.9670764233900684}

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{'text': 'c) Identify six ways in which Christians enhance the true worship of

God today (6 mark)', 'label': 1, 'confidence': 0.8756034037748968}

{'text': 'diay One y Par ofl Md ; . - 4a) Explain the | teachings of prophet Amos on Israel election. (7 marks)', 'label': 1, 'confidence': 0.9756246837622486}

{'text': 'b) State six ways in which God would punish Israel for her evils according to Amos. (6 marks)', 'label': 1, 'confidence': 0.9852844548029245}

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{'text': 'Geittns (Smks)', 'label': 0, 'confidence': 0.35114916172121974}

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{'text': '(b) Outline what Angel Gabriel revealed about John the Baptist when he (7mks)', 'label': 1, 'confidence': 0.9970910138619394}

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{'text': '(6) In what ways are Christians preparing for th coming of the Messiah Gmks)', 'label': 1, 'confidence': 0.9617491787135184}

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{'text': '(b) State 8 extra-ordinary things that took place at the time of Jesus crucified/execution (8mks)', 'label': 1, 'confidence': 0.9782430306517674}

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{'text': '(C) List any § gilts of the Holy Spirit (Smks)', 'label': 1, 'confidence': 0.9688173560999374}

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 coast during the long distance trade, (2 marks)', 'label': 1, 'confidence':  
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 Kenya. (1 mark)", 'label': 1, 'confidence': 0.7537093322925492}  
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 {'text': '|. Give two reasons why the British used indirect rule in some parts  
 of Kens (2-marks)', 'label': 1, 'confidence': 0.9876675550846099}  
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 Kenge lore 1224-0 te)', 'label': 0, 'confidence': 0.47511406761991704}  
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{'text': 'c) Explain five factors that have influenced industrialization in Kenya since independence. (10 marks)', 'label': 1, 'confidence': 0.7531179489945797}

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{'text': '(a) Suppose Kisumu can produce 120 million bushels of wheat if it uses all of its productive resources in the wheat industry, or 80 million yards of cloth if it uses all of its resources in the cloth industry. Use a diagram to illustrate your answers to the following questions. Label the diagram and explain in words.', 'label': 1, 'confidence': 0.969876440272787}

{'text': '(i) Assuming constant opportunity costs, draw Kisumu's production-possibility curve.', 'label': 1, 'confidence': 0.5147000580132775}

{'text': '(Place wheat on the x-axis) {2 marks}', 'label': 1, 'confidence': 0.7523540892719787}

{'text': '(ii) Suppose Kisumu's consumers choose to consume 70 million bushels of wheat.', 'label': 1, 'confidence': 0.7465666775738284}

{'text': 'How much cloth will Kisumu then be able to produce? {2 mark}', 'label': 1, 'confidence': 0.6769994254930399}

{'text': '(iii) What is the true price of a bushel of wheat in Kisumu? (2 marks)', 'label': 1, 'confidence': 0.9984508804931346}

{'text': '(iv) Can Kisumu produce 60 million bushels of wheat and 50 million yards of cloth?', 'label': 1, 'confidence': 0.7507140677218794}

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{'text': '(i) To what are you entitled? {3 marks}', 'label': 1, 'confidence': 0.9940976043381785}

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{'text': '(iii) If you paid KES180 per share, what is the most money you could lose over the year? {2 marks} [15 marks]', 'label': 1, 'confidence': 0.9947741141757155}

{'text': 'OLOOL dj MID AEPES SEC SCHOOL [7 sil FORN: mane EXAM 2024 loLoontes ey Vc 5 i 3 TER PES seco,', 'label': 0, 'confidence': 0.029661546675714173}

{'text': 'ME. |» OlCa Ss ign eauite 6.19. P.O. siete AR r. ANSWER ALL Got aaa (ene + a) Relate ¢| at re message of Peter on the Day of Pentecost. (10 Marks)', 'label': 1, 'confidence': 0.5437771882448783}

{'text': 'b) In what al ways é 2 iid the coming of the Holy Spirit transform the life of Peter on the Day of ~~', 'label': 1, 'confidence': 0.9746808786884475}

{'text': 'Pentecost? (5 Marks)', 'label': 0, 'confidence': 0.40795726202424704}

{'text': 'c) What activities of the church in Kenya show that the Holy Spirit is working among them? (5 Marks)', 'label': 1, 'confidence': 0.999008503829846}

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{'text': 'b) Describe the fruits of the Holy Spirit according to Galatians 5:22-26. (6 Marks)', 'label': 1, 'confidence': 0.9991997344120329}

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{'text': 'b) State teachings of Peter concerning the people of God. (1\* Peter 2:9- 10) (7 Marks)', 'label': 1, 'confidence': 0.9850419167998985}

{'text': 'c) HBw do churches discipline those who cause disunity in the church today? (© Marks)', 'label': 1, 'confidence': 0.9965823244495348}

{'text': 'a) According to Isaiah's prophecy state the names given to the Messiah, ic b) How did Jesus fultill Isaiah's prophecy of the suffering servant eat ¢) How should Christians respond to those who are opposing them? (8 mks)", 'label': 1, 'confidence': 0.9981634513155047}

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{'text': 'b) List the occasions when Jesus was tempted. (6 mks)', 'label': 1,



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{'text': '4, S a) Describe the parable of the Sower. (8 mks)', 'label': 1, 'confidence': 0.9637870950942861}

{'text': 'b) Why did Jesus use parables in his teachings: (6 mks)', 'label': 1, 'confidence': 0.9983419788554215}

{'text': '¶) Outline the lessons that Christians learn from the above parable. (6mks)', 'label': 1, 'confidence': 0.8489850437095332}

{'text': 'S . a) List the fruits of the Holy Spirit as taught by St. Paul (7 mks)', 'label': 0, 'confidence': 0.42598501360423857}

{'text': 'b) Describe the events that took place on the day of pentacost (7 mks)', 'label': 1, 'confidence': 0.9989535772087247}

{'text': '¶) Describe how the unity of believers is expressed in the image of the vine and the branches.(John 15: 1-10) (7 mks)', 'label': 1, 'confidence': 0.9897532088163206}

{'text': '+ sistand2 (6mks)', 'label': 1, 'confidence': 0.5072888609603271}

{'text': 'ae y ne' lical stories of creation it in Biblical creation ies given to human beings by (a mks)', 'label': 1, 'confidence': 0.9404203856896551}

{'text': 'F 6 mks)', 'label': 0, 'confidence': 0.10370100676957007}

{'text': 'Kenya take care of the environment ( (8 mks)', 'label': 0, 'confidence': 0.32291757788649006}

{'text': 'a) Describe the call of Abraham. mks)', 'label': 1, 'confidence': 0.9987956019593511}

{'text': 'b) Explain the characteristics of a covenant. eras)', 'label': 1, 'confidence': 0.9862575859277001}

{'text': '¶) Identify seven examples of covenants made in Kenya today (7m 3. a) Give five reasons why Israelites demanded for a king. (5 mks)', 'label': 1, 'confidence': 0.9548883652496026}

{'text': 'b) What lessons can modern political leaders learn from king David. (8 mks)', 'label': 1, 'confidence': 0.9984577234090031}

{'text': '¶) How do Christians in Kenya demonstrate their faith in God? (7 mks)', 'label': 1, 'confidence': 0.9801548499132121}

{'text': '4. a) State four differences between traditional African prophets and the Old Testament prophets. 5: (8 mks)', 'label': 1, 'confidence': 0.9699925924949608}

{'text': '(6 mks)', 'label': 0, 'confidence': 0.3488481945006585}

{'text': 'b) Outline the social injustices condemned by prophet Amos in Israel.', 'label': 1, 'confidence': 0.8130662794299324}

{'text': 'In what ways is the church in Kenya promoting justice in society? (6 mks)', 'label': 1, 'confidence': 0.9135568676086351}

{'text': 'c)', 'label': 0, 'confidence': 0.2146371379450359}

{'text': 'Re, a) With reference to the teaching of prophet Jeremiah on judgement , State six ways in which God would punish the people of Judah. (6 mks)', 'label': 1, 'confidence': 0.6563576442849599}

{'text': 'b) In what ways did prophet Jeremiah suffer while carrying out his workin Judah. (6 mks)', 'label': 1, 'confidence': 0.9963990742423964}

{'text': 'c) List eight moral values that Christians can acquire from the life

of prophet Jeremiah. (8 mks)', 'label': 1, 'confidence': 0.9828726494473238}

{'text': '6. a) List eight places used for worship in Traditional African communities. (8 mks)', 'label': 1, 'confidence': 0.949284491345405}

{'text': 'b) Give six reasons why sacrifices were made in Traditional African communities. (6 mks)', 'label': 1, 'confidence': 0.9987655789994933}

{'text': 'c) How do Christians in Kenya show respect for places of worship? (6 mks)', 'label': 1, 'confidence': 0.9987705947507326}

{'text': ', PO, Hoa B47 UZ06,', 'label': 0, 'confidence': 0.11822227103390513}

{'text': 'OLOOLTEPES SECON . KIBERIAD -', 'label': 0, 'confidence': 0.030797166023429273}

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{'text': 'CRE. FORM 4 dias', 'label': 0, 'confidence': 0.03522115168990077}

{'text': 'TERM 1, MID TERM EXAM', 'label': 0, 'confidence': 0.03013472531109484}

{'text': 'Paper 2,', 'label': 0, 'confidence': 0.03142733276336642}

{'text': 'NAME pei AMIE NMED Eliseo srssresite ADM NOW ARS iovevsvesere', 'label': 0, 'confidence': 0.035583941312917595}

{'text': 'STRU IONS, : 1. State the Jewish expectation concerning the Messiah, (6mks)', 'label': 1, 'confidence': 0.5301988523897465}

{'text': 'b) Describe the events that were associated with the birth of John the Baptist, (Bmks)', 'label': 1, 'confidence': 0.9995313595639324}

{'text': '©) Give reasons why the birth of a child is celebrated in modern society, (6mks)', 'label': 1, 'confidence': 0.9804284985361124}

{'text': '2. a) Describe the transfiguration of Jesus ay recorded in Luke 9:28 - 37, " (4mks)', 'label': 1, 'confidence': 0.9961877241232148}

{'text': 'b) Outline the instructions that Jesus gave the twelve disciples when he commissioned them', 'label': 1, 'confidence': 0.966883536545098}

{'text': 'Luke 951 -9, (7mks)', 'label': 0, 'confidence': 0.4934432451919419}

{'text': 'e reasons why disciples are called today. (Smks)', 'label': 1, 'confidence': 0.9674572397595651}

{'text': 'ify areas of conflicts between Jesus and the Jewish leaders which eventually led fo (6mks)', 'label': 1, 'confidence': 0.8691005794281239}

{'text': '(were the reactions of the people who witnessed Jesus crucification, (7mks)', 'label': 1, 'confidence': 0.858468555170837}

{'text': 'Significance of passion, death and resurrection of Jesus to Christians today. - the teaching of Jesus on the vine and braches, (7mks)', 'label': 1, 'confidence': 0.6454101484133284}

{'text': 'five ways in which the Holy spirit manifested himself on the day of Pentecost. [are the reasons why some Christians live in Christianity today, (8mks)', 'label': 1, 'confidence': 0.9845149878653767}

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{'text': '(6mks)', 'label': 1, 'confidence': 0.5419712454992193}

{'text': 'causes of conflict between parents and children in the contemporary society? @mks)', 'label': 1, 'confidence': 0.8399148415130024}

{'text': '(6mks)', 'label': 1, 'confidence': 0.5419712454992193}

{'text': '(6mks)', 'label': 1, 'confidence': 0.5419712454992193}

{'text': 'ST, MARKS KISERIAN MI 3a', 'label': 0, 'confidence': 0.02505592232198399}

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{'text': 'XED DAY SECONDARY SCHOOL', 'label': 0, 'confidence': 0.02694467220796621}

{'text': 'NDNA Teun NANG aaa po aey EN c', 'label': 0, 'confidence': 0.03127163937324596}

{'text': 'Min: -TERMEN ERNMENT PAPER 2 iby Me "wc 'Gentity any two classifications of written sources of information on History and', 'label': 0, 'confidence': 0.03848907851846903}

{'text': 'Government. (2marks)', 'label': 1, 'confidence': 0.5894051873552604}

{'text': 'Give one social activ ity that was practiced by e man during the New Stone Age period, (Imark)', 'label': 1, 'confidence': 0.6065543940653929}

{'text': 'State two effects of the Land Enclosure System in Britain during the Agrarian', 'label': 0, 'confidence': 0.16904795007284426}

{'text': 'Revolution. . (2marks)', 'label': 1, 'confidence': 0.5218047840994191}

{'text': 'Highlight two negative effects of the trans-Saharan trade, (marks)', 'label': 1, 'confidence': 0.5591491717071737}

{'text': 'Name the first woman astronaut to travel into space. (Imark) 2', 'label': 0, 'confidence': 0.10543472817074824}

{'text': 'State two importance's of the radio as a form of communication. (2marks)', 'label': 1, 'confidence': 0.7119998592830378}

{'text': 'Give two ways how scientific inventions have negatively impacted on Agriculture. (2marks)', 'label': 1, 'confidence': 0.9480717623051038}

{'text': 'What was the title given to the highest political and religious leader of the Shona? (Imark)', 'label': 1, 'confidence': 0.5879898336497541}

{'text': 'Identify one chartered company that was used by the Europeans to acquire colonies in', 'label': 0, 'confidence': 0.10781985292869699}

{'text': 'Africa. (Imarks)', 'label': 1, 'confidence': 0.5259331214883852}

{'text': 'State one way how the Lochner treaty benefited King Lewanika individually. (1mark)', 'label': 0, 'confidence': 0.40167075942154107}

{'text': '- Outline one social factor that led to the rise of Nationalism in Africa. (imarks)', 'label': 1, 'confidence': 0.9188057359113039}

{'text': '2. State one military alliance that was formed by European nations before the First World War. (Imark)', 'label': 1, 'confidence': 0.7631324349859379}

{'text': '- Name two permanent member states of the United Nations Security Council. (2marks)', 'label': 1, 'confidence': 0.8500514728629187}

{'text': 'State one way how the Cold War was witnessed in Africa. (Imark)', 'label': 0, 'confidence': 0.4727090736301689}

{'text': 'Name two military alliances which were formed during the cold war. (2marks)', 'label': 1, 'confidence': 0.6670524099472438}

{'text': '. Outline two reasons w hy U nited States of America did not join the First World War until 1917. (2marks)', 'label': 1, 'confidence': 0.8421758214870265}

{'text': 'Name Ibe event pthay marked the end of Second World Wars. (Imarks)', 'label': 1, 'confidence': 0.5691838715065572}

{'text': 'Question 5', 'label': 0, 'confidence': 0.02789243511574138}

{'text': '(a) Suppose that you have the following investment plans 1) You

deposit KES10, 000 every end of the year for next 10 years', 'label': 1, 'confidence': 0.824374965288257}

{'text': 'II) You deposit KES10, 000 at the beginning of every year for the next 10 years', 'label': 0, 'confidence': 0.11916249392086416}

{'text': 'Which plan would you go for and why given that the investment earns 7.5% semi- annually? {7 marks}', 'label': 1, 'confidence': 0.8641600857692048}

{'text': '(b) Table 3 shows the quantity and price of bread and butter produced in country Z between 2009 and 2013. le 3: Price and quantity of bread and butter produced in country z hat onlv bree here applicable):', 'label': 1, 'confidence': 0.9224992700205858}

{'text': 'GDP {2 m and 2013 {2 marks} marks} j [15 marks]', 'label': 0, 'confidence': 0.2503900117117145}

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{'text': 'FACULTY OF APPLIED SCIENCES AND TECHNOLOGY', 'label': 0, 'confidence': 0.03218272429688482}

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{'text': 'Question [.', 'label': 0, 'confidence': 0.02789243511574138}

{'text': 'Bis peptic Rb "examine the incomplete or inc ts involvement in st ress" afluence risk culture and capabilities in an organization. Provide examples of recent yernance scenarios where the risk committee has played a pivotal role in 0 bn ong! aren se < CeCctlve rs! k culture. temporary € hee', 'label': 0, 'confidence': 0.2567881575230861}

{'text': 'Lacy gues poser cay te sulatory expectatic', 'label': 0, 'confidence': 0.03416257096421366}

{'text': 'Ha honeny hee | mentation. (6 Ma»'k ne', 'label': 0, 'confidence':

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{'text': 'Strathmore', 'label': 0, 'confidence': 0.025232837038439353}
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Time: 3 Hours ice cream market in Mombasa. _ G Marks)', 'label': 0,
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'label': 0, 'confidence': 0.05811829895761237}
{'text': 'SSORY) and any other TWO questions. (3 Marks)', 'label': 0,
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{'text': '| how it differs from the Newton-Raphson (3 Marks)', 'label': 1,
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{'text': '7 le value of the root of the function f(x) =', 'label': 0,
'confidence': 0.48875024056467525}
{'text': 'R code that you would use to solve this (6 Marks)', 'label': 1,
'confidence': 0.6154635699931152}
{'text': 'Me thematically) how you would generate f£0) = @exp - (0y), and
further numbers from this distribution. / 7 (8 Marks)', 'label': 1,
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{'text': 'ye', 'label': 0, 'confidence': 0.23262785105032388}
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{'text': 'October, 2022 Time: 3 hours ----- / any', 'label': 0, 'confidence':
0.026107243680379318}
{'text': 'Bi 80: million yards of cloth if it uses all of iagram to illustrate
your answers to the 1] 1 be ae to produce? ie mark} yet heat i in Kisumu? (2
eS)', 'label': 0, 'confidence': 0.13506956014214982}
{'text': '[15 marks]', 'label': 0, 'confidence': 0.48214007543581844}
{'text': 'SECTION A: Attempt ALL questions in this section', 'label': 0,
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```

{'text': 'QUESTION ONE a. State and explain THREE indirect modes of transmission of communicable diseases [3Mks] \_ Highlight THREE levels of prevention of communicable diseases [3Mks]', 'label': 1, 'confidence': 0.8953281942305842}

{'text': '(i) State FOUR importance of personal hygiene [4Mks]', 'label': 1, 'confidence': 0.9804981618725849}

{'text': '(ii) State and explain any FIVE ways by which alcohol use raises the risk of cancer [6Mks] d. (i) State FOUR importance of personal hygiene x [4Mks]', 'label': 1, 'confidence': 0.9978291409824149}

{'text': '(ii) State and explain any FIVE methods of Prevention and Control of HIV/AIDs [10Mks]', 'label': 1, 'confidence': 0.9965762060706637}

{'text': 'SECTION B: Answer any TWO questions in this section', 'label': 0, 'confidence': 0.045764758980074295}

{'text': 'QUESTION TWO', 'label': 0, 'confidence': 0.04255548285167895}

{'text': '(a) State and explain any TEN factors that affect malaria transmission [10Mks]', 'label': 1, 'confidence': 0.9956526849935856}

{'text': '(b) Describe any FIVE malaria prevention and control strategies [10Mks]', 'label': 1, 'confidence': 0.9978384524600129}

{'text': 'QUESTiICN THREE', 'label': 0, 'confidence': 0.035218653367874775}

{'text': '(a) Giving examples for each, classify the SEX known addictive drugs and their mode of intake [10Mks]', 'label': 1, 'confidence': 0.9641740827118123}

{'text': '(b) State and eexplain FIVE ways by which alcohol decreases resistance to HIV', 'label': 1, 'confidence': 0.9443465116791271}

{'text': 'Infection [10Mks]', 'label': 0, 'confidence': 0.45717485613298736}

{'text': 'QUESTION FOUR &', 'label': 0, 'confidence': 0.05388533186135503}

{'text': '(a) Describe FIVE Goals of Antiretroviral therapy in HIV/AIDs treatments [10Mks]', 'label': 1, 'confidence': 0.9980733177994254}

{'text': '(b) Discuss FIVE ways of positive living with HIV/AIDs [10Mks] lifestyle factors that contribute to many of such health problems? [10Mks]', 'label': 1, 'confidence': 0.9986226350724147}

{'text': 'Yo of deaths from lifestyle diseases occur in low- and middle-', 'label': 0, 'confidence': 0.03937256873356174}

{'text': 'Sion By ain this scenario using five reasons? [10Mks]', 'label': 0, 'confidence': 0.30809132603896583}

{'text': 'QUESTION ONE (30 MARKS)-COMPULSORY a). Explain the following programming tools used in program development:- \\. Language translators ii Unker ii. IDE iv. Loader (4 Marks)', 'label': 1, 'confidence': 0.850766570576262}

{'text': 'b). Explain the following System development life cycle stages in program development. (6 Marks)', 'label': 1, 'confidence': 0.9929632471143854}

{'text': 'i. Feasibility study ii. System investigation ili, System design', 'label': 0, 'confidence': 0.4850988218793753}

{'text': 'Cc). Differentiate between pseudo code and a flowchart. (2 Marks)', 'label': 1, 'confidence': 0.8548725176087456}

{'text': '(. Using a in a pseudo code and a flowchart, write a solution of a problem to calculate the area of a circle using the formula area = J) r°, where JI=3.14 and r is radius. (6 Marks)', 'label': 1, 'confidence': 0.9724052346131499}

{'text': 'wr, a structured program that calculates the area of a circle using

the formula  $area = r^2$ , where  $J1=3.14$ ', 'label': 1, 'confidence': 0.8254039878455929}

{'text': 'D andris rads. (6 Marks f). Differentiate between structured programming and modular programming. (4 Marks)', 'label': 0, 'confidence': 0.4511378555322282}

{'text': 'g). Outiine any two benefits of structured programming. (2 Marks)', 'label': 1, 'confidence': 0.88546585304388}

{'text': 'in the following principles used in programming: (4 Marks)', 'label': 1, 'confidence': 0.8949005376112323}

{'text': '[in programming, giving an illustration using a flowchart for each. ia (6 Marks)', 'label': 1, 'confidence': 0.769902289451809}

{'text': 'QUESTION 1 [30 MARKS] COMPULSORY a) Explain the two types of functions used in C program, giving an example of each. (4 Marks)', 'label': 1, 'confidence': 0.8488183589959096}

{'text': 'b) Write a program in C programming language that allows a user to input a whole number of X in main program and uses two user defined functions name, square() to compute the square of the number X and cube() to compute the cube of X, then veer the X, result of the square and cube in the main program. Use if() to select each subprogram at a time to execute. ; (10 Marks)', 'label': 1, 'confidence': 0.999564075852245}

{'text': 'c) Explain the program structure of a C program, giving relevant examples using the program in Q1 (b). (5 Marks)', 'label': 1, 'confidence': 0.9991428197440668}

{'text': 'd) Differentiate between an array, a record, a pointer and a file, then write a C program that implements an array, a record and a file using a structure (record) consisting of itemname and itemcode to store data of 20 items in a retail shop computer and displays a list of the 20 items details reading from file. Given that item name is a string of 25 characters, item code is a number of 4 digits, record name is item, logical file is itemfile, and physical file is "C:\\item\\itemf.dat'. (11 Marks)', 'label': 1, 'confidence': 0.9970727105611217}

{'text': 'QUESTION 2 [20 MARKS] a) Explain the three concepts used in structured programming. (9 Marks)', 'label': 1, 'confidence': 0.8765788851634829}

{'text': 'b) Write a C program that that has three subprograms, first subprogram to input a list of 18 customers names as string and ; deposit as number with decimal point, second subprogram to compute sum of the deposit of all customers and third ubprogram to display the list the 18 customers names and deposit, and sum of deposits. (11 Marks)', 'label': 1, 'confidence': 0.999352379222507}

{'text': 'sed in structured programming. (9 Marks)', 'label': 1, 'confidence': 0.8085385343182285}

{'text': '(0) , npute the area of acircle and to compute perimeter of a circle, (11. Marks)', 'label': 1, 'confidence': 0.8237026721919707}

{'text': '(4 Marks)', 'label': 0, 'confidence': 0.3475524807286264}

{'text': '"Paul" and "John" respectively, Explain the following (8 marks)', 'label': 1, 'confidence': 0.957899742706059}

{'text': '; name, idumber, and course and then (8 Marks)', 'label': 1, 'confidence': 0.7988137609408369}

{'text': '(5 Marks)', 'label': 0, 'confidence': 0.3475524807286264}

{'text': '(9 Marks)', 'label': 0, 'confidence': 0.3475524807286264}  
{'text': '(6 Marks)', 'label': 0, 'confidence': 0.3475524807286264}

-----EXTRACTED QUESTIONS-----

(a) For each of the following scenarios, use a supply and demand diagram to illustrate the effect of a given shock on the equilibrium price and quantity in the specified competitive market. Explain whether there is a shift in the demand curve, the supply, or neither i) An unexpected temporary heat wave hits the South Coast. Show the effect in the ice cream market in Mombasa. (3 Marks)  
ii) The government introduces a tax on ice cream which is paid by producers.

What is the effect in the ice cream market? (3 Marks)

(b) The price elasticity of demand  $-0.45$  in the long run. Why would the demand for crude oil be price in the short-run and (3 Marks)

elastic in the long run than in the short run? Briefly explain.

(c) Briefly explain why a supply shock leads to stagflation. (3 Marks)

(d) In the context of financial markets, distinguish between informational efficiency. (4 Marks)

Examine the importance of data quality in risk analytics, discuss the potential impact of incomplete or incorrect data on risk prediction models, and propose strategies for mitigating these issues. (4 marks)

. Analyze the 2 limitations of different machine learning algorithms (such as decision trees, neural networks, and support vector machines) in predicting credit default risk (4 marks)

Besides its involvement in stress testing, analyze three other ways that the risk committee is able to influence risk culture and capabilities in an organization. Provide examples of recent corporate governance scenarios where the risk committee has played a pivotal role in fostering an effective risk culture. (6 Marks)

Critically assess the benefits and criticisms of regulatory frameworks for banks and insurance companies. Use contemporary examples to illustrate your points and focus on the effects of recent changes in regulatory expectations, such as the increased focus on individual accountability and documentation. (8 marks)

"Risk identification forms the foundation of comprehensive risk management.

Given the evolution of risks in the modern global context, including technological, environmental, and geopolitical risks, traditional risk identification methods may need to be supplemented or rethought."

© 4-1) Identify seven reasons why man is considered' naa (emote . fall o! J ie Biblical apie? eee ay, (6 marks)

b) State six causes of sin from y. «) Wdentify ways in which Christian (7 marks)  
or in EgyPt strate his power in he hey were in the desert (8 marks)

rshipped God when tt faster (5 marks)

2a) Name seven plagues that God used to de b) Identify eigh ) Give the similarities between the Jewish Passover an t ways in which the Israelites wo! id Christians i (7 marks)

3 a) Give seven ways in which Elijah succeeded as a Prophet of God. 5) Outline the conditions that made it difficult for Prophet Elijah to stop idolatry 1" Israel (7 marks)

c) Identify six ways in which Christians enhance the true worship of God today



(6 mark)

diay One y Par ofl Md ; . - 4a) Explain the | teachings of prophet Amos on Israel election. (7 marks)

b) State six ways in which God would punish Israel for her evils according to Amos. (6 marks)

' " (Smks)

to handle cases of dishonesty. (8 marks)

(©) Give five reasons why Christians go to church of announced his

(b) Outline what Angel Gabriel revealed about John the Baptist when he (7mks) birth to Zachariah (8mks)

2. (a) Explain the healing of the paralytic in Luke 5:18-26 7mks)

(b) List seven expectations of the Jews concerning the Messiah ( ° Ss

(6) In what ways are Christians preparing for th coming of the Messiah Gmks)

3: (©) Give six reasons that the Jewish leaders had to have Jesus arrested and even executed (6mks)

(b) State 8 extra-ordinary things that took place at the time of Jesus crucified/execution (8mks)

(c) State six problems that Christian today encounter while trying to practice their faith (6mks)

(b) Narrate peters message on the day of Pentecost (8mks)

(c) Give reasons why people abuse alcohol and other drugs today (Smks)

5. (a) State the role of the holy spirit as taught by Jesus (8mks)

(b) State Any Seven characteristics of Love (7mks)

(C) List any \$ gilts of the Holy Spirit (Smks)

6, (a) Explain the analogy of the People of God as used (0 express the unity of believers (7mks)

(b) What are the causes of disunity in the church today? (6mks)

(c) How is the unity believers expressed in the church today (7mks)

A. Which is okccre ne where the remains of Kenyapitheus were discovered in Kenya: (2 marks)

A. Stats two anette uence (mak rea me ities obtained from the Kenyan coast during the long distance trade, (2 marks)

2 Susceue iiae the government may limit one's freedom of movement in Kenya. (1 mark)

pee eS ae (2 marks)

40. Give aaa reaty which marked the colonial sphere of influence in East Africa in 1886. (1 mark)

|. Give two reasons why the British used indirect rule in some parts of Kens (2-marks)

Give two features of the political organizations which were formed in Kenya before 1939. (2 marks)

. Give one special court in Kenya. (1 mark)

\* |identify two education commissions in Kenya since independence. (2:marks)

State two types of government expenditure in Kenya. (@ marks)

"Answer Any three questions in this Section. ofthe Luo from their original homeland into Kenya. (5 marks)

18. a) Give five reasons for the migration 'Tthe Somali in Kenya during the pre-colonial period. (10 marks)

b) Describe the political organization of (3 marks)

19. a) State three factors which enabled the Arabs to sail from Oman to the Kenyan Coast. (12 marks)

b) Explain six effects of long distance trade on the people of Kenya

20. a) State five terms of the Devonshire White Paper of 1923. (5 marks)

b) Explain five problems faced by Africans in Urban Centres during the colonial period. (10 marks)

21. a) Give five features of African Socialism in Kenya. (5 marks)

b) Explain five factors that have influenced industrialization in Kenya since independence. (10 marks)

Answer Any Two questions from this section. Person should meet to qualify to be a citizen by birth in Kenya. (6 marks)

22. a) Give three conditions for citizenship in Kenya. (3 marks)

b) Explain six features of the Constitution of Kenya (2010)

23. a) Outline the composition of the County Executive Committee. (6 marks)

b) Describe the law making process at the National level in Kenya. (12 marks)

24. a) State five objectives of Devolution. b) Explain five ways in which the government of Kenya ensures effective utilization of public funds. (10 marks)

Examine the importance of data quality in risk analytics, discuss the potential impact of incomplete or incorrect data on risk prediction models, and propose strategies for mitigating these issues. (4 marks)

1. Analyze the 2 limitations of different machine learning algorithms (such as decision trees, neural networks, and support vector machines) in predicting credit default risk (4 marks)

Besides its involvement in stress testing, analyze three other ways that the risk committee is able to influence risk culture and capabilities in an organization. Provide examples of recent corporate governance scenarios where the risk committee has played a pivotal role in fostering an effective risk culture. (6 Marks)

Critically assess the benefits and criticisms of regulatory frameworks for banks and insurance companies. Use contemporary examples to illustrate your points and focus on the effects of recent changes in regulatory expectations, such as the increased focus on individual accountability and documentation. (8 marks)

"Risk identification forms the foundation of comprehensive risk management. Given the evolution of risks in the modern global context, including technological, environmental, and geopolitical risks, traditional risk identification methods may need to be supplemented or rethought."

(a) For each of the following scenarios, use a supply and demand diagram to illustrate the effect of a given shock on the equilibrium price and quantity in the specified competitive market. Explain whether there is a shift in the demand curve, the supply, or neither

i) An unexpected temporary heat wave hits the South Coast. Show the effect in the ice cream market in Mombasa. (3 Marks)

ii) The government introduces a tax on ice cream which is paid by producers. What is the effect in the ice cream market? (3 Marks)

(b) The price elasticity of demand is -0.45 in the long run. Why would the demand for crude oil be more elastic in the long run than in the short run? Briefly explain.

(c) Briefly explain why a supply shock leads to stagflation. (3 Marks)

(d) In the context of financial markets, distinguish between informational efficiency. (4 Marks)

(a) Suppose Kisumu can produce 120 million bushels of wheat if it uses all of its productive resources in the wheat industry, or 80 million yards of cloth if it uses all of its resources in the cloth industry. Use a diagram to illustrate your answers to the following questions. Label the diagram and explain in words.

(i) Assuming constant opportunity costs, draw Kisumu's production-possibility curve.

(Place wheat on the x-axis) {2 marks}

(ii) Suppose Kisumu's consumers choose to consume 70 million bushels of wheat. How much cloth will Kisumu then be able to produce? {2 mark}

(iii) What is the true price of a bushel of wheat in Kisumu? (2 marks)

(iv) Can Kisumu produce 60 million bushels of wheat and 50 million yards of cloth?

If so why? {2 marks}

(b) If you buy 100 shares of East African Breweries stock

(i) To what are you entitled? {3 marks}

(ii) What is the most money you can make on this investment over the next year? {2 marks}

(iii) If you paid KES180 per share, what is the most money you could lose over the year? {2 marks} [15 marks]

ME. |» OlCa Ss ign eauite 6.19. P.O. siete AR r. ANSWER ALL Got aaa (ene + a) Relate ¶| at re message of Peter on the Day of Pentecost. (10 Marks)

b) In what ways is the coming of the Holy Spirit transforming the life of Peter on the Day of ~~

c) What activities of the church in Kenya show that the Holy Spirit is working among them? (5 Marks)

2a) From the teachings of Jesus, what role would the Holy Spirit play? (8 Marks)

b) Describe the fruits of the Holy Spirit according to Galatians 5:22-26. (6 Marks)

c) In what ways do Christians demonstrate the fruit of generosity? (6 Marks)

3a) Explain how the unity of believers is expressed in the symbol of the body of Christ. (7 Marks)

b) State teachings of Peter concerning the people of God. (1\* Peter 2:9- 10) (7 Marks)

c) How do churches discipline those who cause disunity in the church today? (© Marks)

a) According to Isaiah's prophecy state the names given to the Messiah, i.e. b) How did Jesus fulfill Isaiah's prophecy of the suffering servant? c) How should Christians respond to those who are opposing them? (8 mks)

a) Outline the role of John the Baptist. (7 mks)

b) State the lessons that Christians learn from the annunciation of the birth of John the

c) State the reasons: why Jesus was baptized yet he was sinless. (6 mks)

or a) Narrate the transfiguration of Jesus. (8 mks)

b) List the occasions when Jesus was tempted. (6 mks)

c) Outline the reasons why Christians should repent their sins. (6 mks)

4, S a) Describe the parable of the Sower. (8 mks)  
b) Why did Jesus use parables in his teachings: (6 mks)  
¢) Outline the lessons that Christians learn from the above parable. (6mks)  
b) Describe the events that took place on the day of pentacost (7 mks)  
¢) Describe how the unity of believers is expressed in the image of the vine and the branches.(John 15: 1-10) (7 mks)  
+ sistand2 (6mks)  
ae y ne' lical stories of creation it in Biblical creation ies given to human beings by (a mks)  
a) Describe the call of Abraham. mks)  
b) Explain the characteristics of a covenant. eras)  
¢) Identify seven examples of covenants made in Kenya today (7m 3. a) Give five reasons why Israelites demanded for a king. (5 mks)  
b) What lessons can modern political leaders learn from king David. (8 mks)  
¢) How do Christians in Kenya demonstrate their faith in God? (7 mks)  
4. a) State four differences between traditional African prophets and the Old Testament prophets. 5: (8 mks)  
b) Outline the social injustices condemned by prophet Amos in Israel.  
In what ways is the church in Kenya promoting justice in society? (6 mks)  
Re, a) With reference to the teaching of prophet Jeremiah on judgement , State six ways in which God would punish the people of Judah. (6 mks)  
b) In what ways did prophet Jeremiah suffer while carrying out his workin Judah. (6 mks)  
c) List eight moral values that Christians can acquire from the life of prophet Jeremiah. (8 mks)  
6. a) List eight places used for worship in Traditional African communities. (8 mks)  
b) Give six reasons why sacrifices were made in Traditional African communities. (6 mks)  
c) How do Christians in Kenya show respect for places of worship? (6 mks)  
STRU IONS, : 1. State the Jewish expectation concerning the Messiah, (6mks)  
b) Describe the events that were associated with the birth of John the Baptist, (Bmks)  
©) Give reasons why the birth of a child is celebrated in modern sociely, (6mks)  
2. a) Describe the transfiguration of Jesus ay recorded in Luke 9:28 - 37, " (4mks)  
b) Outline the instructions that Jesus gave the twelve disciples when he commissioned them  
e reasons why disciples are called today. (Smks)  
ify areas of conflicts between Jesus and the Jewish leaders which eventually led fo (6mks)  
(were the reactions of the people who witnessed Jesus crucification, (7mks)  
Significance of passion, death and resurrection of Jesus to Christians today. - the teaching of Jesus on the vine and braches, (7mks)  
five ways in which the Holy spirit manifested himself on the day of Pentecost. [are the reasons why some Christians live in Christianity today, (8mks)  
(8mks)  
(6mks)

causes of conflict between parents and children in the contemporary society?

(6mks)

(6mks)

(6mks)

Government. (2marks)

Give one social activity that was practiced by a man during the New Stone Age period, (1mark)

Revolution. . (2marks)

Highlight two negative effects of the trans-Saharan trade, (marks)

State two importance's of the radio as a form of communication. (2marks)

Give two ways how scientific inventions have negatively impacted on Agriculture. (2marks)

What was the title given to the highest political and religious leader of the Shona? (1mark)

Africa. (1marks)

- Outline one social factor that led to the rise of Nationalism in Africa. (1marks)

2. State one military alliance that was formed by European nations before the First World War. (1mark)

- Name two permanent member states of the United Nations Security Council. (2marks)

Name two military alliances which were formed during the cold war. (2marks)

. Outline two reasons why United States of America did not join the First World War until 1917. (2marks)

Name the event that marked the end of Second World Wars. (1marks)

(a) Suppose that you have the following investment plans 1) You deposit KES10,000 every end of the year for next 10 years

Which plan would you go for and why given that the investment earns 7.5% semi-annually? {7 marks}

(b) Table 3 shows the quantity and price of bread and butter produced in country Z between 2009 and 2013. Table 3: Price and quantity of bread and butter produced in country Z (that only bread here applicable):

Briefly explain. (3 Marks)

| how it differs from the Newton-Raphson (3 Marks)

R code that you would use to solve this (6 Marks)

Methodically) how you would generate  $f(x) = \exp(-x)$ , and further numbers from this distribution. / 7 (8 Marks)

QUESTION ONE a. State and explain THREE indirect modes of transmission of communicable diseases [3Mks] - Highlight THREE levels of prevention of communicable diseases [3Mks]

(i) State FOUR importance of personal hygiene [4Mks]

(ii) State and explain any FIVE ways by which alcohol use raises the risk of cancer [6Mks] d. (i) State FOUR importance of personal hygiene x [4Mks]

(ii) State and explain any FIVE methods of Prevention and Control of HIV/AIDS [10Mks]

(a) State and explain any TEN factors that affect malaria transmission [10Mks]

(b) Describe any FIVE malaria prevention and control strategies [10Mks]

(a) Giving examples for each, classify the SEX known addictive drugs and their

mode of intake [10Mks]

(b) State and explain FIVE ways by which alcohol decreases resistance to HIV

(a) Describe FIVE Goals of Antiretroviral therapy in HIV/AIDS treatments [10Mks]

(b) Discuss FIVE ways of positive living with HIV/AIDS [10Mks] lifestyle factors that contribute to many of such health problems? [10Mks]

QUESTION ONE (30 MARKS)-COMPULSORY a). Explain the following programming tools used in program development:- i. Language translators ii. Compiler iii. IDE iv. Loader (4 Marks)

b). Explain the following System development life cycle stages in program development. (6 Marks)

c). Differentiate between pseudo code and a flowchart. (2 Marks)

(. Using a in a pseudo code and a flowchart, write a solution of a problem to calculate the area of a circle using the formula  $area = \pi r^2$ , where  $\pi = 3.14$  and  $r$  is radius. (6 Marks)

write, a structured program that calculates the area of a circle using the formula  $area = \pi r^2$ , where  $\pi = 3.14$

g). Outline any two benefits of structured programming. (2 Marks)

in the following principles used in programming: (4 Marks)

[in programming, giving an illustration using a flowchart for each. (6 Marks)]

QUESTION 1 [30 MARKS] COMPULSORY a) Explain the two types of functions used in C program, giving an example of each. (4 Marks)

b) Write a program in C programming language that allows a user to input a whole number of  $X$  in main program and uses two user defined functions name, square() to compute the square of the number  $X$  and cube() to compute the cube of  $X$ , then print the  $X$ , result of the square and cube in the main program. Use if() to select each subprogram at a time to execute. ; (10 Marks)

c) Explain the program structure of a C program, giving relevant examples using the program in Q1 (b). (5 Marks)

d) Differentiate between an array, a record, a pointer and a file, then write a C program that implements an array, a record and a file using a structure (record) consisting of itemname and itemcode to store data of 20 items in a retail shop computer and displays a list of the 20 items details reading from file. Given that item name is a string of 25 characters, item code is a number of 4 digits, record name is item, logical file is itemfile, and physical file is "C:\item\itemf.dat". (11 Marks)

QUESTION 2 [20 MARKS] a) Explain the three concepts used in structured programming. (9 Marks)

b) Write a C program that has three subprograms, first subprogram to input a list of 18 customers names as string and ; deposit as number with decimal point, second subprogram to compute sum of the deposit of all customers and third subprogram to display the list the 18 customers names and deposit, and sum of deposits. (11 Marks)

used in structured programming. (9 Marks)

(0) , compute the area of a circle and to compute perimeter of a circle, (11 Marks)

"Paul" and "John" respectively, Explain the following (8 marks)

; name, idnumber, and course and then (8 Marks)

----- 188 questions, extracted from 346 lines -----

Using the Naive Bayes model to predict, then printing the results

Using the SVM model to predict, then printing the results

```
[ ]: text = []
all_questions = []

def sigmoid(x):
    return 1 / (1 + np.exp(-x))

for line in refined.split('\n'):
    if not line.strip(): # Skip empty lines
        continue

    features = features_from_text_line(line) # transforms your input
    prediction = SVMmodel.predict(features) # Predict the label

    # If probability is enabled, use it directly
    # if SVMmodel.probability:
    #     prediction_proba = SVMmodel.predict_proba(features) # Get the
    ↪probabilities
    #     confidence = prediction_proba[0][1] # Assuming 1 is the positive
    ↪class
    # else:
    # Use the decision function as a proxy for confidence
    decision_score = SVMmodel.decision_function(features)[0]
    confidence = sigmoid(decision_score) # Convert decision function score to
    ↪confidence using sigmoid

    text.append({'text': line, 'label': prediction[0], 'confidence':
    ↪confidence})

    # If the confidence score is above a certain threshold and the label is 1,
    ↪consider it a question
    threshold = 0.5 # Define your threshold here
    if prediction[0] == 1 and confidence > threshold:
        all_questions.append(line)

# Convert list of dictionaries to DataFrame
df = pd.DataFrame(text)

# Save to CSV, excluding the index
df.to_csv('predictions/SVMmodel.csv', index=False, columns=['text', 'label',
    ↪'confidence'])

print("\n-----OUTPUT-----")
```

```

for t in text:
    print(t)

print("\n-----EXTRACTED QUESTIONS-----")
for q in all_questions:
    print(q)

print("\n----- " + str(len(all_questions)) + " questions, extracted from_
↳" + str(len(text)) + " lines -----")

```

-----OUTPUT-----

```

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{'text': 'c) Identify six ways in which Christians enhance the true worship of God today (6 mark)', 'label': 1, 'confidence': 0.7310675512738327}

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{'text': '¥il Adonis} one estou way aries werent allowed to wow cnsu crops m Kenge lore 1224-0 te)', 'label': 0, 'confidence': 0.4959718839598533}

{'text': 'Give two features of the political organizations which were formed in Kenya before 1939. (2 marks)', 'label': 1, 'confidence': 0.7310514590709234}

{'text': '. Give one special court in Kenya. (1 mark)', 'label': 1, 'confidence': 0.7068840106584391}

{'text': '| Beside unity, name the other pillar of Nyayoism. (1 mark)', 'label': 0, 'confidence': 0.49485862813184583}

{'text': '\* |identify two education commissions in Kenya since independence. (2:marks)', 'label': 1, 'confidence': 0.7089205827524576}

{'text': '(1 mark)', 'label': 0, 'confidence': 0.3605569510524883}

{'text': 'Outline one function of the speaker of the County Assembly', 'label': 1, 'confidence': 0.5044755596504588}

{'text': 'State two types of government expenditure in Kenya. (@ marks)', 'label': 1, 'confidence': 0.606947459037018}

{'text': 'SECTION B: (45 MARKS)', 'label': 0, 'confidence': 0.26899656415752937}

{'text': '"Answer Any three questions in this Section. ofthe Luo from their original homeland into Kenya. (5 marks)', 'label': 1, 'confidence': 0.691410594842668}

{'text': '18. a) Give five reasons for the migration 'Tthe Somali in Kenya during the pre-colonial period. (10 marks)', 'label': 1, 'confidence': 0.790879449279248}

{'text': 'b) Describe the political organization o (3 marks)', 'label': 1, 'confidence': 0.7707892775983791}

{'text': '19, a) State three factors which enabled the Arabs 10 sail from Oman to the Kenyan Coast. (12 marks)', 'label': 1, 'confidence': 0.7310594242425731}

{'text': 'b) Explain six effects of long distance trade on the people of Kenya 20. a) State five terms of the Devonshire White Paper of 1923. (5 marks)', 'label': 1, 'confidence': 0.8024964075589489}

{'text': 'b) Explain five problems faced by Africans in Urban Centres during the colonial period. (10 marks)', 'label': 1, 'confidence': 0.7776670564603466}

{'text': '21. a) Give five features of African Socialism in Kenya. (5 marks)', 'label': 1, 'confidence': 0.7902749878834903}

{'text': 'lization in Kenya since independence. (10marks)', 'label': 1, 'confidence': 0.7310375073453843}

{'text': ') Explain five factors that have influenced industrial', 'label': 1, 'confidence': 0.7310793711495884}

{'text': 'Answer Any Two questions from this section. erson should meet to qualify to be a citizen by birth in Kenya. G marks)', 'label': 1, 'confidence': 0.6274547970542982}

{'text': '22. a) Give three conditions a ps (12 marks)', 'label': 1, 'confidence': 0.7730478569453295}

{'text': ') Explain six features ofthe Constitution of Kenya (2010)', 'label': 1, 'confidence': 0.7310362761178324}

{'text': '23. a) Outline the composition of the County Executive Committee, G marks)', 'label': 1, 'confidence': 0.7698768703819598}

{'text': ') Describe the law making process atthe National level in Kenya. (12 marks)', 'label': 1, 'confidence': 0.7484531829140706}

{'text': '(5 marks)', 'label': 0, 'confidence': 0.2690010524277236}

{'text': '24, a) State five objectives of Devolution. b) Explain five ways in which the government of Kenya ensures effective utilization of public funds. (10 marks)', 'label': 1, 'confidence': 0.7970503212312968}

{'text': 'io Maseno School Mock Committee 2023 co :', 'label': 0, 'confidence': 0.2688885889858033}

{'text': 'Strathmore', 'label': 0, 'confidence': 0.26901689759027214}

{'text': 'UNIVERSITY', 'label': 0, 'confidence': 0.2606357028288713}

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{'text': 'Instructions &', 'label': 0, 'confidence': 0.2689399264994667}

{'text': 'Dy', 'label': 0, 'confidence': 0.26897462381420334}

{'text': 'This examination consists of FIVE questions.', 'label': 0, 'confidence': 0.26895882049140096}

{'text': 'Answer Question ONE (COMPULSORY) and any other TWO questions.', 'label': 0, 'confidence': 0.26878761630160103}

{'text': 'Question 1 (30 Marks)', 'label': 0, 'confidence': 0.26898725280783375}

{'text': '1p', 'label': 0, 'confidence': 0.268947241531882}

{'text': 'Examine the importance of data quality in risk analytics, discuss the potential impact of incomplete or incorrect data on risk prediction models, and propose strategies for mitigating these issues. (4 marks)', 'label': 1, 'confidence': 0.7310570280567055}

{'text': '. Analyze the 2 limitations of different machine learning algorithms (such as decision trees, neural networks, and support vector machines) in predicting credit default risk (4 marks)', 'label': 1, 'confidence': 0.7537111148049301}

{'text': 'Besides its involvement in stress testing, analyze three other ways that the risk committee is able to influence risk culture and capabilities in an organization. Provide examples of recent corporate governance scenarios where the risk committee has played a pivotal role in fostering an effective risk culture. (6 Marks)', 'label': 1, 'confidence': 0.7310970522899184}

{'text': 'Critically assess the benefits and criticisms of regulatory frameworks for banks and insurance companies. Use contemporary examples to illustrate your points and focus on the effects of recent changes in regulatory expectations, such as the increased focus on individual accountability and documentation. (8 marks)', 'label': 1, 'confidence': 0.7310551150985742}

{'text': '"Risk identification forms the foundation of comprehensive risk management. Given the evolution of risks in the modern global context, including technological, environmental, and geopolitical risks, traditional risk identification methods may need to be supplemented or rethought."', 'label': 1, 'confidence': 0.7309907810929533}

{'text': 'Page 1 of 4', 'label': 0, 'confidence': 0.2689339089848818}

{'text': 'DSA 8105: FUNDAMENTAL CONCEPTS IN a', 'label': 0, 'confidence': 0.2689234137010236}

{'text': 'DATE: 6% September 2021', 'label': 0, 'confidence': 0.269030285135292}

{'text': 'Instructions', 'label': 0, 'confidence': 0.2689399264994667}

{'text': 'Ibs This examination consists of FIVE questions. 2s Answer Question ONE (COMPULSORY) and any other Two ques e', 'label': 0, 'confidence': 0.2689408180572683}

{'text': 'QUESTION ONE (20 MARKS)', 'label': 0, 'confidence': 0.2689609084119541}

{'text': '(a) For each of the following scenarios, use a supply and demand diagram to illustrate the effect of a given shock on the equilibrium price and quantity in the specified competitive market. Explain whether there is a shift in the demand curve, the supply, or neither i) An unexpected temporary heat wave hits the South Coast. Show the effect in the ice cream market in Mombasa. (3 Marks)', 'label': 1, 'confidence': 0.8166174169211711}

{'text': 'ii) The government introduces a tax on ice cream which is paid by producers. What is the effect in the ice cream market? (3 Marks)', 'label': 1, 'confidence': 0.8077788492198441}

{'text': 'for crude oil in country H has been estimated to be -0.06', 'label': 0, 'confidence': 0.26901747248587776}

{'text': '(b) The price elasticity of demand -0.45 in the long run. Why would the demand for crude oil be price in the short-run and (3 Marks)', 'label': 1, 'confidence': 0.8097141441201369}

{'text': 'elastic in the long run than in the short run? Briefly explain.', 'label': 1, 'confidence': 0.7311156909753198}

{'text': '(c) Briefly explain why a supply shock leads to stagflation. (3 Marks)', 'label': 1, 'confidence': 0.7811905515174514}

{'text': 'n economic efficiency and', 'label': 0, 'confidence': 0.2689561489843442}

{'text': '(d) In the context of financial markets, distinguish between informational efficiency. (4 Marks)', 'label': 1, 'confidence': 0.7355275824118406}

{'text': 'Page 1 of 3', 'label': 0, 'confidence': 0.2689339089848818}

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{'text': 'Date: 4<sup>o</sup> October, 2022 Time: 3 hours', 'label': 0, 'confidence': 0.26891919197780134}

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{'text': 'Question 1', 'label': 0, 'confidence': 0.23553960966570855}

{'text': '(a) Suppose Kisumu can produce 120 million bushels of wheat if it uses all of its productive resources in the wheat industry, or 80 million yards of cloth if it uses all of its resources in the cloth industry. Use a diagram to illustrate your answers to the following questions. Label the diagram and explain in words.', 'label': 1, 'confidence': 0.777781989118983}

{'text': '(i) Assuming constant opportunity costs, draw Kisumu's production-possibility curve.', 'label': 1, 'confidence': 0.6154555486981776}

{'text': '(Place wheat on the x-axis) {2 marks}', 'label': 1, 'confidence': 0.6840271225196076}

{'text': '(ii) Suppose Kisumu's consumers choose to consume 70 million bushels of wheat.', 'label': 1, 'confidence': 0.7311199580336774}

{'text': 'How much cloth will Kisumu then be able to produce? {2 mark}', 'label': 1, 'confidence': 0.6896421572131205}

{'text': '(iii) What is the true price of a bushel of wheat in Kisumu? (2 marks)', 'label': 1, 'confidence': 0.7883478026447913}

{'text': '(iv) Can Kisumu produce 60 million bushels of wheat and 50 million yards of cloth?', 'label': 1, 'confidence': 0.7310238077544823}

{'text': 'If so why? {2 marks}', 'label': 1, 'confidence': 0.7310549864245808}

{'text': '(b) If you buy 100 shares of East African Breweries stock', 'label': 1, 'confidence': 0.7310546215632414}

{'text': '(i) To what are you entitled? {3 marks}', 'label': 1, 'confidence': 0.7822912401200696}

{'text': '(ii) What is the most money you can make on this investment over the next year? {2 marks}', 'label': 1, 'confidence': 0.7780400815951491}

{'text': '(iii) If you paid KES180 per share, what is the most money you could lose over the year? {2 marks} [15 marks]', 'label': 1, 'confidence': 0.7830801397679582}

{'text': 'OLOOL dj MID AEPES SEC SCHOOL [7 sil FORN: mane EXAM 2024 loLoontes ey Vc 5 i 3 TER PES seco,', 'label': 0, 'confidence': 0.2689497649275371}

{'text': 'ME. |» OlCa Ss ign eauite 6.19. P.O. siete AR r. ANSWER ALL Got aaa (ene + a) Relate ¢| at re message of Peter on the Day of Pentecost. (10 Marks)', 'label': 1, 'confidence': 0.6476962168827455}

{'text': 'b) In what al ways é 2 iid the coming of the Holy Spirit transform the life of Peter on the Day of ~', 'label': 1, 'confidence': 0.7473625324220179}

{'text': 'Pentecost? (5 Marks)', 'label': 1, 'confidence': 0.596485020057751}

{'text': 'c) What activities of the church in Kenya show that the Holy Spirit is working among them? (5 Marks)', 'label': 1, 'confidence': 0.7910519828514911}

{'text': '2a) From the teachings of Jesus, what role would the Holy Spirit play? (8 Marks)', 'label': 1, 'confidence': 0.7714804041281424}

{'text': 'b) Describe the fruits of the Holy Spirit according to Galatians 5:22-26. (6 Marks)', 'label': 1, 'confidence': 0.7836474455011633}

{'text': 'c) In what ways do Christians demonstrate the fruit of generosity? (6 Marks)', 'label': 1, 'confidence': 0.8135612979109451}

{'text': '3a) Explain how the unity of believers is expressed in the symbol of the body of Christ. (7 Marks)', 'label': 1, 'confidence': 0.78006633084709}

{'text': 'b) State teachings of Peter concerning the people of God. (1\* Peter 2:9- 10) (7 Marks)', 'label': 1, 'confidence': 0.7884197939013672}

{'text': 'c) HBw do churches discipline those who cause disunity in the church today? (© Marks)', 'label': 1, 'confidence': 0.7994406029531431}

{'text': 'a) According to Isaiah's prophecy state the names given to the Messiah, ic b) How did Jesus fultill Isaiah's prophecy of the suffering servant eat ¢) How should Christians respond to those who are opposing them? (8 mks)', 'label': 1, 'confidence': 0.8148191122749071}

{'text': 'a) Outline the role of John the Baptist. (7 mks)', 'label': 1, 'confidence': 0.7947365779762875}

{'text': 'b) State the lessons that Christians learn from the annunciation of the birth of John the', 'label': 1, 'confidence': 0.7311023408268035}

{'text': 'Baptist. (7:mks)', 'label': 0, 'confidence': 0.46306431445775703}

{'text': 'c) State the reasons: why Jesus was baptized yet he was sinless. (6 mks)', 'label': 1, 'confidence': 0.8026644449556011}

{'text': 'oy a) Narrate the transfiguration of Jesus. (8 mks)', 'label': 1, 'confidence': 0.7309952710458715}

{'text': 'b) List the occasions when Jesus was tempted. (6 mks)', 'label': 1, 'confidence': 0.792032956506232}

{'text': 'c) Outline the reasons why Christians should repent their sins. (6 mks)', 'label': 1, 'confidence': 0.7460654277197761}

{'text': '4, S a) Describe the parable of the Sower. (8 mks)', 'label': 1, 'confidence': 0.7477277074183194}

{'text': 'b) Why did Jesus use parables in his teachings: (6 mks)', 'label': 1, 'confidence': 0.7697902579743325}

{'text': 'c) Outline the lessons that Christians learn from the above parable. (6mks)', 'label': 1, 'confidence': 0.7310350621441118}

{'text': 'S . a) List the fruits of the Holy Spirit as taught by St. Paul (7 mks)', 'label': 0, 'confidence': 0.488200460526228}

{'text': 'b) Describe the events that took place on the day of pentacost (7 mks)', 'label': 1, 'confidence': 0.7823669308452655}

{'text': 'c) Describe how the unity of believers is expressed in the image of the vine and the branches.(John 15: 1-10) (7 mks)', 'label': 1, 'confidence': 0.7625880069929173}

{'text': '+ sistand2 (6mks)', 'label': 0, 'confidence': 0.3726737242317245}

{'text': 'ae y ne' lical stories of creation it in Biblical creation ies given to human beings by (a mks)', 'label': 1, 'confidence': 0.731006215929526}

{'text': 'F 6 mks)', 'label': 0, 'confidence': 0.2172763014534053}

{'text': 'Kenya take care of the environment ( (8 mks)', 'label': 0, 'confidence': 0.3740815314331713}

{'text': 'a) Describe the call of Abraham. mks)', 'label': 1, 'confidence': 0.7679496567821785}

{'text': 'b) Explain the characteristics of a covenant. eras)', 'label': 1, 'confidence': 0.7343508701870478}

{'text': 'c) Identify seven examples of covenants made in Kenya today (7m 3. a) Give five reasons why Israelites demanded for a king. (5 mks)', 'label': 1, 'confidence': 0.7379283256476282}

{'text': 'b) What lessons can modern political leaders learn from king David. (8 mks)', 'label': 1, 'confidence': 0.7695473219103082}

{'text': 'c) How do Christians in Kenya demonstrate their faith in God? (7 mks)', 'label': 1, 'confidence': 0.7470327370845627}

{'text': '4. a) State four differences between traditional African prophets and the Old Testament prophets. 5: (8 mks)', 'label': 1, 'confidence': 0.7375972525959948}

{'text': '(6 mks)', 'label': 0, 'confidence': 0.27977775228698043}

{'text': 'b) Outline the social injustices condemned by prophet Amos in Israel.', 'label': 1, 'confidence': 0.644734305995452}

{'text': 'In what ways is the church in Kenya promoting justice in society? (6 mks)', 'label': 1, 'confidence': 0.7234519530373978}

{'text': 'c)', 'label': 0, 'confidence': 0.26902752776864547}



{'text': 'Re, a) With reference to the teaching of prophet Jeremiah on judgement , State six ways in which God would punish the people of Judah. (6 mks)', 'label': 1, 'confidence': 0.7310353816900385}

{'text': 'b) In what ways did prophet Jeremiah suffer while carrying out his workin Judah. (6 mks)', 'label': 1, 'confidence': 0.7952248753367076}

{'text': 'c) List eight moral values that Christians can acquire from the life of prophet Jeremiah. (8 mks)', 'label': 1, 'confidence': 0.7812095594828201}

{'text': '6. a) List eight places used for worship in Traditional African communities. (8 mks)', 'label': 1, 'confidence': 0.7310813090897692}

{'text': 'b) Give six reasons why sacrifices were made in Traditional African communities. (6 mks)', 'label': 1, 'confidence': 0.7764494480039107}

{'text': 'c) How do Christians in Kenya show respect for places of worship? (6 mks)', 'label': 1, 'confidence': 0.780575564953272}

{'text': ', PO, Hoa B47 UZ06,', 'label': 0, 'confidence': 0.26892086741787036}

{'text': 'OLOOLTEPES SECON . KIBERIAD -', 'label': 0, 'confidence': 0.26897226820996956}

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{'text': 'CRE. FORM 4 dias', 'label': 0, 'confidence': 0.2689446183949055}

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{'text': 'Paper 2,', 'label': 0, 'confidence': 0.27641550227530554}

{'text': 'NAME pei AMIE NMED Eliseo srssresite ADM NOW ARS iovevsvesere', 'label': 0, 'confidence': 0.26895546515623037}

{'text': 'STRU IONS, : 1. State the Jewish expectation concerning the Messiah, (6mks)', 'label': 1, 'confidence': 0.6163377850054278}

{'text': 'b) Describe the events that were associated with the birth of John the Baptist, (Bmks)', 'label': 1, 'confidence': 0.8011494209171354}

{'text': '©) Give reasons why the birth of a child is celebrated in modern society, (6mks)', 'label': 1, 'confidence': 0.7365125540153209}

{'text': '2. a) Describe the transfiguration of Jesus ay recorded in Luke 9:28 - 37, " (4mks)', 'label': 1, 'confidence': 0.802716982157246}

{'text': 'b) Outline the instructions that Jesus gave the twelve disciples when he commissioned them', 'label': 1, 'confidence': 0.7338511170716832}

{'text': 'Luke 951 -9, (7mks)', 'label': 1, 'confidence': 0.6151913911720279}

{'text': 'e reasons why disciples are called today. (Smks)', 'label': 1, 'confidence': 0.761045430116881}

{'text': 'ify areas of conflicts between Jesus and the Jewish leaders which eventually led fo (6mks)', 'label': 1, 'confidence': 0.731110970227118}

{'text': '(were the reactions of the people who witnessed Jesus crucification, (7mks)', 'label': 1, 'confidence': 0.7310423665265068}

{'text': 'Significance of passion, death and resurrection of Jesus to Christians today. - the teaching of Jesus on the vine and braches, (7mks)', 'label': 1, 'confidence': 0.699305753648394}

{'text': 'five ways in which the Holy spirit manifested himself on the day of Pentecost. [are the reasons why some Christians live in Christianity today, (8mks)', 'label': 1, 'confidence': 0.8091912798317873}

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{'text': '(6mks)', 'label': 0, 'confidence': 0.4212697305999011}

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society? @mks)', 'label': 1, 'confidence': 0.6669094084947783}

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{'text': 'XED DAY SECONDARY SCHOOL', 'label': 0, 'confidence': 0.2689870608099872}

{'text': 'NDNA Teun NANG aaa po aey EN c', 'label': 0, 'confidence': 0.2689488382365026}

{'text': 'Min: -TERMEN ERNMENT PAPER 2 iby Me "wc 'Gentity any two classifications of written sources of information on History and', 'label': 0, 'confidence': 0.2689425463146747}

{'text': 'Government. (2marks)', 'label': 1, 'confidence': 0.7004390308671966}

{'text': 'Give one social activ ity that was practiced by e man during the New Stone Age period, (Imark)', 'label': 1, 'confidence': 0.6831085294161903}

{'text': 'State two effects of the Land Enclosure System in Britain during the Agrarian', 'label': 0, 'confidence': 0.48465704462231063}

{'text': 'Revolution. . (2marks)', 'label': 1, 'confidence': 0.6550833463551639}

{'text': 'Highlight two negative effects of the trans-Saharan trade, (marks)', 'label': 1, 'confidence': 0.6535931679219497}

{'text': 'Name the first woman astronaut to travel into space. (Imark) 2', 'label': 0, 'confidence': 0.41865005758143436}

{'text': 'State two importance's of the radio as a form of communication. (2marks)', 'label': 1, 'confidence': 0.7309909495729756}

{'text': 'Give two ways how scientific inventions have negatively impacted on Agriculture. (2marks)', 'label': 1, 'confidence': 0.6846109568305647}

{'text': 'What was the title given to the highest political and religious leader of the Shona? (Imark)', 'label': 1, 'confidence': 0.5989857016893427}

{'text': 'Identify one chartered company that was used by the Europeans to acquire colonies in', 'label': 0, 'confidence': 0.43408420452547425}

{'text': 'Africa. (Imarks)', 'label': 1, 'confidence': 0.6288878148774567}

{'text': 'State one way how the Lochner treaty benefited King Lewanika individually. (Imark)', 'label': 1, 'confidence': 0.6418526338845885}

{'text': '- Outline one social factor that led to the rise of Nationalism in Africa. (imarks)', 'label': 1, 'confidence': 0.7524758805515317}

{'text': '2. State one military alliance that was formed by European nations before the First World War. (Imark)', 'label': 1, 'confidence': 0.7310355431984181}

{'text': '- Name two permanent member states of the United Nations Security Council. (2marks)', 'label': 1, 'confidence': 0.6887552099065783}

{'text': 'State one way how the Cold War was witnessed in Africa. (Imark)', 'label': 1, 'confidence': 0.6825802115476333}

{'text': 'Name two military alliances which were formed during the cold war. (2marks)', 'label': 1, 'confidence': 0.7078813477326785}

{'text': '. Outline two reasons w hy U nited States of America did not join the First World War until 1917. (2marks)', 'label': 1, 'confidence': 0.7078813477326785}

0.7310555127583528}

{'text': 'Name Ibe event pthay marked the end of Second World Wars. (Imarks)',  
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{'text': 'Question 5', 'label': 0, 'confidence': 0.23553960966570855}

{'text': '(a) Suppose that you have the following investment plans 1) You  
deposit KES10, 000 every end of the year for next 10 years', 'label': 1,  
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{'text': 'II) You deposit KES10, 000 at the beginning of every year for the next  
10 years', 'label': 0, 'confidence': 0.4428009916588978}

{'text': 'Which plan would you go for and why given that the investment earns  
7.5% semi- annually? {7 marks}', 'label': 1, 'confidence': 0.7310850476151158}

{'text': '(b) Table 3 shows the quantity and price of bread and butter produced  
in country Z between 2009 and 2013. le 3: Price and quantity of bread and butter  
produced in country z hat onlv bree here applicable):', 'label': 1,  
'confidence': 0.7181043519800016}

{'text': 'GDP {2 m and 2013 {2 marks} marks} j [15 marks]', 'label': 0,  
'confidence': 0.48960723515645654}

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{'text': 'TIME: 2 Hours 2021 a', 'label': 0, 'confidence': 0.2689138278755296}

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ress" afluence risk culture and capabilities in an organization. Provide  
examples of recent yernance scenarios where the risk committee has played a

pivotal role in 0 bn ong! aren se < CeCctlve rs! k culture. temporary € hee',  
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your answers to the 1] 1 be ae to produce? ie mark} yet heat i in Kisumu? (2  
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risk of cancer [6Mks] d. (i) State FOUR importance of personal hygiene x  
[4Mks]', 'label': 1, 'confidence': 0.8146356106660619}  
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{'text': 'Sion By ain this scenario using five reasons? [10Mks]', 'label': 0,  
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{'text': 'QUESTION ONE (30 MARKS)-COMPULSORY a). Explain the following  
programming tools used in program development:- \\ . Language translators ii  
Unker ii. IDE iv. Loader (4 Marks)', 'label': 1, 'confidence':  
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{'text': 'b). Explain the following System development life cycle stages in  
program development. (6 Marks)', 'label': 1, 'confidence': 0.7793087702626528}  
{'text': 'i. Feasibility study ii. System investigation ili, System design',  
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{'text': '(. Using a in a pseudo code and a flowchart, write a solution of a problem to calculate the area of a circle using the formula area = J) r°, where JI=3.14 and r is radius. (6 Marks)', 'label': 1, 'confidence': 0.801612042409925}

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{'text': 'g). Outiine any two benefits of structured programming. (2 Marks)', 'label': 1, 'confidence': 0.7309796781944017}

{'text': 'in the following principles used in programming: (4 Marks)', 'label': 1, 'confidence': 0.7310593828523974}

{'text': '[in programming, giving an illustration using a flowchart for each. ia (6 Marks)', 'label': 1, 'confidence': 0.7310566014325343}

{'text': 'QUESTION 1 [30 MARKS] COMPULSORY a) Explain the two types of functions used in C program, giving an example of each. (4 Marks)', 'label': 1, 'confidence': 0.6891231453873994}

{'text': 'b) Write a program in C programming language that allows a user to input a whole number of X in main program and uses two user defined functions name, square() to compute the square of the number X and cube() to compute the cube of X, then veer the X, result of the square and cube in the main program. Use if() to select each subprogram at a time to execute. ; (10 Marks)', 'label': 1, 'confidence': 0.807162969417527}

{'text': 'c) Explain the program structure of a C program, giving relevant examples using the program in Q1 (b). (5 Marks)', 'label': 1, 'confidence': 0.7908977689420178}

{'text': 'd) Differentiate between an array, a record, a pointer and a file, then write a C program that implements an array, a record and a file using a structure (record) consisting of itemname and itemcode to store data of 20 items in a retail shop computer and displays a list of the 20 items details reading from file. Given that item name is a string of 25 characters, item code is a number of 4 digits, record name is item, logical file is itemfile, and physical file is "C:\\\\item\\\\itemf.dat'. (11 Marks)', 'label': 1, 'confidence': 0.8049855632496763}

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{'text': 'b) Write a C program that that has three subprograms, first subprogram to input a list of 18 customers names as string and ; deposit as number with decimal point, second subprogram to compute sum of the deposit of all customers and third ubprogram to display the list the 18 customers names and deposit, and sum of deposits. (11 Marks)', 'label': 1, 'confidence': 0.7909328202559599}

{'text': 'sed in structured programming. (9 Marks)', 'label': 1, 'confidence': 0.7311088965890442}

{'text': '(0) , npute the area of acircle and to compute perimeter of a circle, (11. Marks)', 'label': 1, 'confidence': 0.7310734801749919}

{'text': '(4 Marks)', 'label': 0, 'confidence': 0.2690010524277236}

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{'text': '"Paul" and "John" respectively, Explain the following (8 marks)',
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{'text': '(9 Marks)', 'label': 0, 'confidence': 0.2690010524277236}
{'text': '(6 Marks)', 'label': 0, 'confidence': 0.2690010524277236}
```

-----EXTRACTED QUESTIONS-----

(a) For each of the following scenarios, use a supply and demand diagram to illustrate the effect of a given shock on the equilibrium price and quantity in the specified competitive market. Explain whether there is a shift in the demand curve, the supply, or neither i) An unexpected temporary heat wave hits the South Coast. Show the effect in the ice cream market in Mombasa. (3 Marks) ii) The government introduces a tax on ice cream which is paid by producers. What is the effect in the ice cream market? (3 Marks)

(b) The price elasticity of demand  $-0.45$  in the long run. Why would the demand for crude oil be price in the short-run and (3 Marks) elastic in the long run than in the short run? Briefly explain.

(c) Briefly explain why a supply shock leads to stagflation. (3 Marks)

(d) In the context of financial markets, distinguish between informational efficiency. (4 Marks)

Examine the importance of data quality in risk analytics, discuss the potential impact of incomplete or incorrect data on risk prediction models, and propose strategies for mitigating these issues. (4 marks)

. Analyze the 2 limitations of different machine learning algorithms (such as decision trees, neural networks, and support vector machines) in predicting credit default risk (4 marks)

Besides its involvement in stress testing, analyze three other ways that the risk committee is able to influence risk culture and capabilities in an organization. Provide examples of recent corporate governance scenarios where the risk committee has played a pivotal role in fostering an effective risk culture. (6 Marks)

Critically assess the benefits and criticisms of regulatory frameworks for banks and insurance companies. Use contemporary examples to illustrate your points and focus on the effects of recent changes in regulatory expectations, such as the increased focus on individual accountability and documentation. (8 marks)

"Risk identification forms the foundation of comprehensive risk management. Given the evolution of risks in the modern global context, including technological, environmental, and geopolitical risks, traditional risk identification methods may need to be supplemented or rethought."

© 4-1) Identify seven reasons why man is considered' naa (emote . fall o! J ie Biblical apie? eee ay, (6 marks)

b) State six causes of sin from y. «) Wdentify ways in which Christian (7 marks) or in EgyPt strate his power in he hey were in the desert (8 marks) rshipped God when tt faster (5 marks)

2a) Name seven plagues that God used to de b) Identify eigh ) Give the similarities between the Jewish Passover an t ways in which the Israelites wo!

id Christians i (7 marks)

3 a) Give seven ways in which Elijah succeeded as a Prophet of God. 5) Outline the conditions that made it difficult for Prophet Elijah to stop idolatry in Israel (7 marks)

c) Identify six ways in which Christians enhance the true worship of God today (6 marks)

4a) Explain the teachings of prophet Amos on Israel election. (7 marks)

b) State six ways in which God would punish Israel for her evils according to Amos. (6 marks)

Lessons Christians learn from Israel's election. (6 marks)

' " (5 marks)

to handle cases of dishonesty. (8 marks)

(c) Give five reasons why Christians go to church of announced his

(b) Outline what Angel Gabriel revealed about John the Baptist when he birth to Zachariah (8 marks)

2. (a) Explain the healing of the paralytic in Luke 5:18-26 (7 marks)

(b) List seven expectations of the Jews concerning the Messiah ( 5 marks)

(6) In what ways are Christians preparing for the coming of the Messiah (6 marks)

3: (a) Give six reasons that the Jewish leaders had to have Jesus arrested and even executed (6 marks)

(b) State 8 extra-ordinary things that took place at the time of Jesus crucified/execution (8 marks)

(c) State six problems that Christians today encounter while trying to practice their faith (6 marks)

(b) Narrate Peter's message on the day of Pentecost (8 marks)

(c) Give reasons why people abuse alcohol and other drugs today (5 marks)

5. (a) State the role of the Holy Spirit as taught by Jesus (8 marks)

(b) State Any Seven characteristics of Love (7 marks)

(c) List any 5 gifts of the Holy Spirit (5 marks)

6, (a) Explain the analogy of the People of God as used to express the unity of believers (7 marks)

(b) What are the causes of disunity in the church today? (6 marks)

(c) How is the unity of believers expressed in the church today (7 marks)

Define Constitution. Answer all questions in this Section. 2. Identify the Monarchy as a form of government. (1 mark)

A. Which is the place where the remains of Kenyapithecus were discovered in Kenya? (2 marks)

A. State two advantages (factors) obtained from the Kenyan coast during the long distance trade, (2 marks)

2. Discuss the government may limit one's freedom of movement in Kenya. (1 mark)

3. (2 marks)

40. Give a treaty which marked the colonial sphere of influence in East Africa in 1886. (1 mark)

1. Give two reasons why the British used indirect rule in some parts of Kenya (2 marks)

Give two features of the political organizations which were formed in Kenya



before 1939. (2 marks)

. Give one special court in Kenya. (1 mark)

\* Identify two education commissions in Kenya since independence. (2:marks)

Outline one function of the speaker of the County Assembly

State two types of government expenditure in Kenya. (@ marks)

"Answer Any three questions in this Section. of the Luo from their original homeland into Kenya. (5 marks)

18. a) Give five reasons for the migration 'The Somali in Kenya during the pre-colonial period. (10 marks)

b) Describe the political organization o (3 marks)

19, a) State three factors which enabled the Arabs to sail from Oman to the Kenyan Coast. (12 marks)

b) Explain six effects of long distance trade on the people of Kenya 20. a)

State five terms of the Devonshire White Paper of 1923. (5 marks)

b) Explain five problems faced by Africans in Urban Centres during the colonial period. (10 marks)

21. a) Give five features of African Socialism in Kenya. (5 marks)

lization in Kenya since independence. (10marks)

) Explain five factors that have influenced industrial

Answer Any Two questions from this section. person should meet to qualify to be a citizen by birth in Kenya. 6 marks)

22. a) Give three conditions a ps (12 marks)

) Explain six features of the Constitution of Kenya (2010)

23. a) Outline the composition of the County Executive Committee, 6 marks)

) Describe the law making process at the National level in Kenya. (12 marks)

24, a) State five objectives of Devolution. b) Explain five ways in which the government of Kenya ensures effective utilization of public funds. (10 marks)

Examine the importance of data quality in risk analytics, discuss the potential impact of incomplete or incorrect data on risk prediction models, and propose strategies for mitigating these issues. (4 marks)

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elastic in the long run than in the short run? Briefly explain.

(c) Briefly explain why a supply shock leads to stagflation. (3 Marks)

(d) In the context of financial markets, distinguish between informational efficiency. (4 Marks)

(a) Suppose Kisumu can produce 120 million bushels of wheat if it uses all of its productive resources in the wheat industry, or 80 million yards of cloth if it uses all of its resources in the cloth industry. Use a diagram to illustrate your answers to the following questions. Label the diagram and explain in words.

(i) Assuming constant opportunity costs, draw Kisumu's production-possibility curve.

(Place wheat on the x-axis) {2 marks}

(ii) Suppose Kisumu's consumers choose to consume 70 million bushels of wheat. How much cloth will Kisumu then be able to produce? {2 mark}

(iii) What is the true price of a bushel of wheat in Kisumu? (2 marks)

(iv) Can Kisumu produce 60 million bushels of wheat and 50 million yards of cloth?

If so why? {2 marks}

(b) If you buy 100 shares of East African Breweries stock

(i) To what are you entitled? {3 marks}

(ii) What is the most money you can make on this investment over the next year? {2 marks}

(iii) If you paid KES180 per share, what is the most money you could lose over the year? {2 marks} [15 marks]

ME. |» OlCa Ss ign eauite 6.19. P.O. siete AR r. ANSWER ALL Got aaa (ene + a) Relate ¢| at re message of Peter on the Day of Pentecost. (10 Marks)

b) In what ways did the coming of the Holy Spirit transform the life of Peter on the Day of Pentecost? (5 Marks)

Pentecost? (5 Marks)

c) What activities of the church in Kenya show that the Holy Spirit is working among them? (5 Marks)

2a) From the teachings of Jesus, what role would the Holy Spirit play? (8 Marks)

b) Describe the fruits of the Holy Spirit according to Galatians 5:22-26. (6 Marks)

c) In what ways do Christians demonstrate the fruit of generosity? (6 Marks)

3a) Explain how the unity of believers is expressed in the symbol of the body of Christ. (7 Marks)

b) State teachings of Peter concerning the people of God. (1\* Peter 2:9- 10) (7 Marks)

c) How do churches discipline those who cause disunity in the church today? (© Marks)

a) According to Isaiah's prophecy state the names given to the Messiah, (6 mks)

b) How did Jesus fulfill Isaiah's prophecy of the suffering servant? (6 mks)

c) How should Christians respond to those who are opposing them? (8 mks)

a) Outline the role of John the Baptist. (7 mks)

b) State the lessons that Christians learn from the annunciation of the birth of John the Baptist. (6 mks)

c) State the reasons: why Jesus was baptized yet he was sinless. (6 mks)

d) a) Narrate the transfiguration of Jesus. (8 mks)

b) List the occasions when Jesus was tempted. (6 mks)

c) Outline the reasons why Christians should repent their sins. (6 mks)

4. a) Describe the parable of the Sower. (8 mks)

b) Why did Jesus use parables in his teachings? (6 mks)

c) Outline the lessons that Christians learn from the above parable. (6mks)

b) Describe the events that took place on the day of Pentecost (7 mks)

c) Describe how the unity of believers is expressed in the image of the vine and the branches. (John 15: 1-10) (7 mks)

5. a) Give five biblical stories of creation in Biblical creation given to human beings by God. (5 mks)

a) Describe the call of Abraham. (6 mks)

b) Explain the characteristics of a covenant. (6 mks)

c) Identify seven examples of covenants made in Kenya today (7m 3. a) Give five reasons why Israelites demanded for a king. (5 mks)

b) What lessons can modern political leaders learn from King David. (8 mks)

c) How do Christians in Kenya demonstrate their faith in God? (7 mks)

4. a) State four differences between traditional African prophets and the Old Testament prophets. (8 mks)

b) Outline the social injustices condemned by prophet Amos in Israel. (6 mks)

In what ways is the church in Kenya promoting justice in society? (6 mks)

Re, a) With reference to the teaching of prophet Jeremiah on judgement, State six ways in which God would punish the people of Judah. (6 mks)

b) In what ways did prophet Jeremiah suffer while carrying out his work in Judah. (6 mks)

c) List eight moral values that Christians can acquire from the life of prophet Jeremiah. (8 mks)

6. a) List eight places used for worship in Traditional African communities. (8 mks)

b) Give six reasons why sacrifices were made in Traditional African communities. (6 mks)

c) How do Christians in Kenya show respect for places of worship? (6 mks)

STRUCTIONS, : 1. State the Jewish expectation concerning the Messiah, (6mks)

b) Describe the events that were associated with the birth of John the Baptist, (6mks)

c) Give reasons why the birth of a child is celebrated in modern society, (6mks)

2. a) Describe the transfiguration of Jesus as recorded in Luke 9:28 - 37, (4mks)

b) Outline the instructions that Jesus gave the twelve disciples when he commissioned them (6mks)

Luke 9:51 - 9, (7mks)

e reasons why disciples are called today. (Smks)

ify areas of conflicts between Jesus and the Jewish leaders which eventually led fo (6mks)

(were the reactions of the people who witnessed Jesus crucification, (7mks)

Significance of passion, death and resurrection of Jesus to Christians today. - the teaching of Jesus on the vine and braches, (7mks)

five ways in which the Holy spirit manifested himself on the day of Pentecost. [are the reasons why some Christians live in Christianity today, (8mks) (8mks)

causes of conflict between parents and children in the contemporary society? @mks)

Government. (2marks)

Give one social activ ity that was practiced by e man during the New Stone Age period, (Imark)

Revolution. . (2marks)

Highlight two negative effects of the trans-Saharan trade, (marks)

State two importance's of the radio as a form of communication. (2marks)

Give two ways how scientific inventions have negatively impacted on Agriculture. (2marks)

What was the title given to the highest political and religious leader of the Shona? (Imark)

Africa. (Imarks)

State one way how the Lochner treaty benefited King Lewanika individually. (1mark)

- Outline one social factor that led to the rise of Nationalism in Africa. (imarks)

2. State one military alliance that was formed by European nations before the First World War. (Imark)

- Name two permanent member states of the United Nations Security Council. (2marks)

State one way how the Cold War was witnessed in Africa. (Imark)

Name two military alliances which were formed during the cold war. (2marks)

. Outline two reasons w hy U nited States of America did not join the First World War until 1917. (2marks)

Name Ibe event pthay marked the end of Second World Wars. (Imarks)

(a) Suppose that you have the following investment plans 1) You deposit KES10, 000 every end of the year for next 10 years

Which plan would you go for and why given that the investment earns 7.5% semi-annually? {7 marks}

(b) Table 3 shows the quantity and price of bread and butter produced in country Z between 2009 and 2013. le 3: Price and quantity of bread and butter produced in country z hat only bree here applicable):

Briefly explain. (3 Marks)

| how it differs from the Newton-Raphson (3 Marks)

7 le value of the root of the function  $f(x) =$

R code that you would use to solve this (6 Marks)

Me thematically) how you would generate  $f\&0) = @exp - (0y)$ , and further numbers from this distribution. / 7 (8 Marks)

QUESTION ONE a. State and explain THREE indirect modes of transmission of communicable diseases [3Mks] \_ Highlight THREE levels of prevention of communicable diseases [3Mks]

(i) State FOUR importance of personal hygiene [4Mks]

(ii) State and explain any FIVE ways by which alcohol use raises the risk of cancer [6Mks] d. (i) State FOUR importance of personal hygiene x [4Mks]

(ii) State and explain any FIVE methods of Prevention and Control of HIV/AIDs [10Mks]

(a) State and explain any TEN factors that affect malaria transmission [10Mks]

(b) Describe any FIVE malaria prevention and control strategies [10Mks]

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QUESTION ONE (30 MARKS)-COMPULSORY a). Explain the following programming tools used in program development:- \. Language translators ii Unker ii. IDE iv. Loader (4 Marks)

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(. Using a in a pseudo code and a flowchart, write a solution of a problem to calculate the area of a circle using the formula  $area = J) r^{\circ}$ , where  $J1=3.14$  and  $r$  is radius. (6 Marks)

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D andris rads. (6 Marks f). Differentiate between structured programming and modular programming. (4 Marks)

g). Outiine any two benefits of structured programming. (2 Marks)

in the following principles used in programming: (4 Marks)

[in programming, giving an illustration using a flowchart for each. ia (6 Marks)

QUESTION 1 [30 MARKS] COMPULSORY a) Explain the two types of functions used in C program, giving an example of each. (4 Marks)

b) Write a program in C programming language that allows a user to input a whole number of X in main program and uses two user defined functions name, square() to compute the square of the number X and cube() to compute the cube of X, then veer the X, result of the square and cube in the main program. Use if() to select each subprogram at a time to execute. ; (10 Marks)

c) Explain the program structure of a C program, giving relevant examples using the program in Q1 (b). (5 Marks)

d) Differentiate between an array, a record, a pointer and a file, then write a C program that implements an array, a record and a file using a structure (record) consisting of itemname and itemcode to store data of 20 items in a retail shop computer and displays a list of the 20 items details reading from file. Given that item name is a string of 25 characters, item code is a number

of 4 digits, record name is item, logical file is itemfile, and physical file is "C:\item\itemf.dat'. (11 Marks)

QUESTION 2 [20 MARKS] a) Explain the three concepts used in structured programming. (9 Marks)

b) Write a C program that has three subprograms, first subprogram to input a list of 18 customers names as string and ; deposit as number with decimal point, second subprogram to compute sum of the deposit of all customers and third subprogram to display the list the 18 customers names and deposit, and sum of deposits. (11 Marks)

sed in structured programming. (9 Marks)

(0) , npute the area of acircle and to compute perimeter of a circle, (11. Marks)

"Paul" and "John" respectively, Explain the following (8 marks)

; name, idumber, and course and then (8 Marks)

----- 195 questions, extracted from 346 lines -----

Using the XGBoost model to predict, then printing the results

```
[ ]: text = []
all_questions = []

for line in refined.split('\n'):
    if not line.strip(): # Skip empty lines
        continue
    prediction = XGBmodel.predict(features_from_text_line(line)) # Predict the
    ↪label

    # For XGBoost, the predict_proba method can be used to get probabilities
    prediction_proba = XGBmodel.predict_proba(features_from_text_line(line))
    confidence = prediction_proba[0][1] # Assuming 1 is the positive class

    # Add the text, predicted label, and confidence to the list
    text.append({'text': line, 'label': prediction[0], 'confidence':
    ↪confidence})

    # If the confidence is above a certain threshold and the label is 1,
    ↪consider it a question
    threshold = 0.0 # Define your threshold here
    if prediction[0] == 1 and confidence > threshold:
        all_questions.append(line)

# Convert list of dictionaries to DataFrame
df = pd.DataFrame(text)

# Save to CSV, excluding the index
```

```

df.to_csv('predictions/XGBmodel.csv', index=False, columns=['text',
↳ 'label', 'confidence'])

print("""

-----OUTPUT-----""")

for t in text:
    print(t)
print("""

-----EXTRACTED QUESTIONS-----

""")
for q in all_questions:
    print(q)

print("\n----- " +str(len(all_questions))+" questions, extracted from_
↳ "+str(len(text))+" lines -----")

```

-----OUTPUT-----

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in the demand curve, the supply, or neither i) An unexpected temporary heat wave
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```



{'text': 'b) State six causes of sin from y. «) Wdentify ways in which Christian (7 marks)', 'label': 1, 'confidence': 0.99976796}

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{'text': 'rshipped God when tt faster (5 marks)', 'label': 1, 'confidence': 0.99864894}

{'text': '2a) Name seven plagues that God used to de b) Identify eigh ) Give the similarities between the Jewish Passover an t ways in which the Israelites wo! id Christians i (7 marks)', 'label': 1, 'confidence': 0.99992955}

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{'text': '2. (a) Explain the healing of the paralytic in Luke 5:18-26 7mks)', 'label': 1, 'confidence': 0.99979526}

{'text': '(b) List seven expectations of the Jews concerning the Messiah ( ° Ss', 'label': 1, 'confidence': 0.9995363}

{'text': '(6) In what ways are Christians preparing for th coming of the Messiah Gmks)', 'label': 1, 'confidence': 0.9297504}

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{'text': '(b) State 8 extra-ordinary things that took place at the time of Jesus crucified/execution (8mks)', 'label': 1, 'confidence': 0.9992161}

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{'text': 'efine Constituti inswer All questions in this Section. 2. Identify ero pint Monarchy as a form of government. (1 mark)', 'label': 1, 'confidence': 0.98369044}

{'text': 'A. Which is okccre ne where the remains of Kenyapitheus were discovered in Kenya: (2 marks)', 'label': 1, 'confidence': 0.9996131}

{'text': 'A. Stats two anette uence (mak rea me ities obtained from the Kenyan coast during the long distance trade, (2 marks)', 'label': 1, 'confidence': 0.9989507}

{'text': '2 Susceue iiae the government may limit one's freedom of movement in Kenya. (1 mark)', 'label': 1, 'confidence': 0.99725705}

{'text': 'pee eS ae (2 marks)', 'label': 1, 'confidence': 0.98866105}

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{'text': 'Sts tro yes org eae exercised in Kenya. (2-marks)', 'label': 1, 'confidence': 0.9964508}

{'text': '40. Give aaa reaty which marked the colonial sphere of influence in East Africa in 1886. (1 mark)', 'label': 1, 'confidence': 0.99856204}

{'text': '|. Give two reasons why the British used indirect rule in some parts of Kens (2-marks)', 'label': 1, 'confidence': 0.9998857}

{'text': '¥il Adonis} one estou way aries werent allowed to wow CNSU crops m Kenge lore 1224-0 te)', 'label': 0, 'confidence': 0.10734234}

{'text': 'Give two features of the political organizations which were formed in Kenya before 1939. (2 marks)', 'label': 1, 'confidence': 0.9995566}

{'text': '. Give one special court in Kenya. (1 mark)', 'label': 1, 'confidence': 0.7849175}

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{'text': 'b) Explain six effects of long distance trade on the people of Kenya 20. a) State five terms of the Devonshire White Paper of 1923. (5 marks)', 'label': 1, 'confidence': 0.9999728}

{'text': 'b) Explain five problems faced by Africans in Urban Centres during the colonial period. (10 marks)', 'label': 1, 'confidence': 0.99987996}

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{'text': 'c) Explain five factors that have influenced industrialization in Kenya since independence. (10 marks)', 'label': 1, 'confidence': 0.80271125}

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{'text': '(i) Assuming constant opportunity costs, draw Kisumu's production-possibility curve.', 'label': 0, 'confidence': 0.09901499}

{'text': '(Place wheat on the x-axis) {2 marks}', 'label': 1, 'confidence': 0.99928325}

{'text': '(ii) Suppose Kisumu's consumers choose to consume 70 million bushels of wheat.', 'label': 1, 'confidence': 0.9871197}

{'text': 'How much cloth will Kisumu then be able to produce? {2 mark}', 'label': 1, 'confidence': 0.81753707}

{'text': '(iii) What is the true price of a bushel of wheat in Kisumu? (2 marks)', 'label': 1, 'confidence': 0.9999584}

{'text': '(iv) Can Kisumu produce 60 million bushels of wheat and 50 million

yards of cloth?', 'label': 1, 'confidence': 0.9588666}

{'text': 'If so why? {2 marks}', 'label': 1, 'confidence': 0.94756126}

{'text': '(b) If you buy 100 shares of East African Breweries stock', 'label': 1, 'confidence': 0.9385791}

{'text': '(i) To what are you entitled? {3 marks}', 'label': 1, 'confidence': 0.9876524}

{'text': '(ii) What is the most money you can make on this investment over the next year? {2 marks}', 'label': 1, 'confidence': 0.9999535}

{'text': '(iii) If you paid KES180 per share, what is the most money you could lose over the year? {2 marks} [15 marks]', 'label': 1, 'confidence': 0.99980205}

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{'text': 'ME. |» OlCa Ss ign eauite 6.19. P.O. siete AR r. ANSWER ALL Got aaa (ene + a) Relate ¢| at re message of Peter on the Day of Pentecost. (10 Marks)', 'label': 1, 'confidence': 0.99943906}

{'text': 'b) In what al ways é 2 iid the coming of the Holy Spirit transform the life of Peter on the Day of ~', 'label': 1, 'confidence': 0.96094984}

{'text': 'Pentecost? (5 Marks)', 'label': 1, 'confidence': 0.8693808}

{'text': 'c) What activities of the church in Kenya show that the Holy Spirit is working among them? (5 Marks)', 'label': 1, 'confidence': 0.9999858}

{'text': '2a) From the teachings of Jesus, what role would the Holy Spirit play? (8 Marks)', 'label': 1, 'confidence': 0.9999378}

{'text': 'b) Describe the fruits of the Holy Spirit according to Galatians 5:22-26. (6 Marks)', 'label': 1, 'confidence': 0.999967}

{'text': 'c) In what ways do Christians demonstrate the fruit of generosity? (6 Marks)', 'label': 1, 'confidence': 0.99994075}

{'text': '3a) Explain how the unity of believers is expressed in the symbol of the body of Christ. (7 Marks)', 'label': 1, 'confidence': 0.9999703}

{'text': 'b) State teachings of Peter concerning the people of God. (1\* Peter 2:9- 10) (7 Marks)', 'label': 1, 'confidence': 0.9999192}

{'text': 'c) HBw do churches discipline those who cause disunity in the church today? (© Marks)', 'label': 1, 'confidence': 0.99991703}

{'text': 'a) According to Isaiah's prophecy state the names given to the Messiah, ic b) How did Jesus fultill Isaiah's prophecy of the suffering servant eat ¢) How should Christians respond to those who are opposing them? (8 mks)', 'label': 1, 'confidence': 0.99953306}

{'text': 'a) Outline the role of John the Baptist. (7 mks)', 'label': 1, 'confidence': 0.9965886}

{'text': 'b) State the lessons that Christians learn from the annunciation of the birth of John the', 'label': 1, 'confidence': 0.98389626}

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{'text': 'c) State the reasons: why Jesus was baptized yet he was sinless. (6 mks)', 'label': 1, 'confidence': 0.99921215}

{'text': 'oy a) Narrate the transfiguration of Jesus. (8 mks)', 'label': 1, 'confidence': 0.90871817}

{'text': 'b) List the occasions when Jesus was tempted. (6 mks)', 'label': 1, 'confidence': 0.9964826}

{'text': '¢) Outline the reasons why Christians should repent their sins. (6

mks)', 'label': 1, 'confidence': 0.96137726}

{'text': '4, S a) Describe the parable of the Sower. (8 mks)', 'label': 0, 'confidence': 0.22400959}

{'text': 'b) Why did Jesus use parables in his teachings: (6 mks)', 'label': 1, 'confidence': 0.99934787}

{'text': 'ϕ) Outline the lessons that Christians learn from the above parable. (6mks)', 'label': 1, 'confidence': 0.95109475}

{'text': 'S . a) List the fruits of the Holy Spirit as taught by St. Paul (7 mks)', 'label': 1, 'confidence': 0.53990614}

{'text': 'b) Describe the events that took place on the day of pentacost (7 mks)', 'label': 1, 'confidence': 0.99984336}

{'text': 'ϕ) Describe how the unity of believers is expressed in the image of the vine and the branches.(John 15: 1-10) (7 mks)', 'label': 1, 'confidence': 0.99019086}

{'text': '+ sistand2 (6mks)', 'label': 0, 'confidence': 0.085914195}

{'text': 'ae y ne' lical stories of creation it in Biblical creation ies given to human beings by (a mks)', 'label': 1, 'confidence': 0.57617533}

{'text': 'F 6 mks)', 'label': 0, 'confidence': 0.2563423}

{'text': 'Kenya take care of the environment ( (8 mks)', 'label': 0, 'confidence': 0.016369615}

{'text': 'a) Describe the call of Abraham. mks)', 'label': 1, 'confidence': 0.9998741}

{'text': 'b) Explain the characteristics of a covenant. eras)', 'label': 1, 'confidence': 0.99980086}

{'text': 'ϕ) Identify seven examples of covenants made in Kenya today (7m 3. a) Give five reasons why Israelites demanded for a king. (5 mks)', 'label': 1, 'confidence': 0.96166694}

{'text': 'b) What lessons can modern political leaders learn from king David. (8 mks)', 'label': 1, 'confidence': 0.99874014}

{'text': 'ϕ) How do Christians in Kenya demonstrate their faith in God? (7 mks)', 'label': 1, 'confidence': 0.99290776}

{'text': '4. a) State four differences between traditional African prophets and the Old Testament prophets. 5: (8 mks)', 'label': 1, 'confidence': 0.9975647}

{'text': '(6 mks)', 'label': 0, 'confidence': 0.019991813}

{'text': 'b) Outline the social injustices condemned by prophet Amos in Israel.', 'label': 1, 'confidence': 0.79776603}

{'text': 'In what ways is the church in Kenya promoting justice in society? (6 mks)', 'label': 1, 'confidence': 0.96468925}

{'text': 'c)', 'label': 0, 'confidence': 0.24650921}

{'text': 'Re, a) With reference to the teaching of prophet Jeremiah on judgement , State six ways in which God would punish the people of Judah. (6 mks)', 'label': 1, 'confidence': 0.9767695}

{'text': 'b) In what ways did prophet Jeremiah suffer while carrying out his workin Judah. (6 mks)', 'label': 1, 'confidence': 0.99437934}

{'text': 'c) List eight moral values that Christians can acquire from the life of prophet Jeremiah. (8 mks)', 'label': 1, 'confidence': 0.99949265}

{'text': '6. a) List eight places used for worship in Traditional African communities. (8 mks)', 'label': 1, 'confidence': 0.992626}

{'text': 'b) Give six reasons why sacrifices were made in Traditional African communities. (6 mks)', 'label': 1, 'confidence': 0.9994293}

{'text': 'c) How do Christians in Kenya show respect for places of worship? (6 mks)', 'label': 1, 'confidence': 0.9992907}

{'text': ', PO, Hoa B47 UZ06,', 'label': 0, 'confidence': 0.0061027487}

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{'text': 'Paper 2,', 'label': 0, 'confidence': 0.011132191}

{'text': 'NAME pei AMIE NMED Eliseo srssresite ADM NOW ARS iovevsvesere', 'label': 0, 'confidence': 0.011132191}

{'text': 'STRU IONS, : 1. State the Jewish expectation concerning the Messiah, (6mks)', 'label': 1, 'confidence': 0.9970306}

{'text': 'b) Describe the events that were associated with the birth of John the Baptist, (Bmks)', 'label': 1, 'confidence': 0.99990046}

{'text': '©) Give reasons why the birth of a child is celebrated in modern sociely, (6mks)', 'label': 1, 'confidence': 0.9993876}

{'text': '2. a) Describe the transfiguration of Jesus ay recorded in Luke 9:28 - 37, " (4mks)', 'label': 1, 'confidence': 0.9997123}

{'text': 'b) Outline the instructions that Jesus gave the twelve disciples when he commissioned them', 'label': 1, 'confidence': 0.99906546}

{'text': 'Luke 951 -9, (7mks)', 'label': 1, 'confidence': 0.6886415}

{'text': 'e reasons why disciples are called today. (Smks)', 'label': 1, 'confidence': 0.76976776}

{'text': 'ify areas of conflicts between Jesus and the Jewish leaders which eventually led fo (6mks)', 'label': 1, 'confidence': 0.99636745}

{'text': '(were the reactions of the people who witnessed Jesus crucification, (7mks)', 'label': 1, 'confidence': 0.9963296}

{'text': 'Significance of passion, death and resurrection of Jesus to Christians today. - the teaching of Jesus on the vine and braches, (7mks)', 'label': 1, 'confidence': 0.9366364}

{'text': 'five ways in which the Holy spirit manifested himself on the day of Pentecost. [are the reasons why some Christians live in Christianity today, (8mks)', 'label': 1, 'confidence': 0.9976484}

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{'text': '(6mks)', 'label': 0, 'confidence': 0.085914195}

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{'text': 'Min: -TERMEN ERNMENT PAPER 2 iby Me "wc 'Gentity any two



classifications of written sources of information on History and', 'label': 0, 'confidence': 0.003090428}

{'text': 'Government. (2marks)', 'label': 1, 'confidence': 0.8756532}

{'text': 'Give one social activity that was practiced by a man during the New Stone Age period, (1mark)', 'label': 1, 'confidence': 0.9951871}

{'text': 'State two effects of the Land Enclosure System in Britain during the Agrarian', 'label': 1, 'confidence': 0.9900935}

{'text': 'Revolution. . (2marks)', 'label': 1, 'confidence': 0.8756532}

{'text': 'Highlight two negative effects of the trans-Saharan trade, (marks)', 'label': 1, 'confidence': 0.9972899}

{'text': 'Name the first woman astronaut to travel into space. (1mark) 2', 'label': 1, 'confidence': 0.98693335}

{'text': 'State two importance's of the radio as a form of communication. (2marks)', 'label': 1, 'confidence': 0.9956488}

{'text': 'Give two ways how scientific inventions have negatively impacted on Agriculture. (2marks)', 'label': 1, 'confidence': 0.9620164}

{'text': 'What was the title given to the highest political and religious leader of the Shona? (1mark)', 'label': 1, 'confidence': 0.96681756}

{'text': 'Identify one chartered company that was used by the Europeans to acquire colonies in', 'label': 1, 'confidence': 0.99031067}

{'text': 'Africa. (1marks)', 'label': 1, 'confidence': 0.6886415}

{'text': 'State one way how the Lochner treaty benefited King Lewanika individually. (1mark)', 'label': 1, 'confidence': 0.9870545}

{'text': '- Outline one social factor that led to the rise of Nationalism in Africa. (1marks)', 'label': 1, 'confidence': 0.9893965}

{'text': '2. State one military alliance that was formed by European nations before the First World War. (1mark)', 'label': 1, 'confidence': 0.9223746}

{'text': '- Name two permanent member states of the United Nations Security Council. (2marks)', 'label': 1, 'confidence': 0.99436814}

{'text': 'State one way how the Cold War was witnessed in Africa. (1mark)', 'label': 1, 'confidence': 0.99067515}

{'text': 'Name two military alliances which were formed during the cold war. (2marks)', 'label': 1, 'confidence': 0.9961682}

{'text': '1. Outline two reasons why United States of America did not join the First World War until 1917. (2marks)', 'label': 1, 'confidence': 0.99436814}

{'text': 'Name the event that marked the end of Second World Wars. (1marks)', 'label': 1, 'confidence': 0.989799}

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{'text': 'II) You deposit KES10, 000 at the beginning of every year for the next 10 years', 'label': 1, 'confidence': 0.85726243}

{'text': 'Which plan would you go for and why given that the investment earns 7.5% semi-annually? {7 marks}', 'label': 1, 'confidence': 0.99933237}

{'text': '(b) Table 3 shows the quantity and price of bread and butter produced in country Z between 2009 and 2013. le 3: Price and quantity of bread and butter produced in country z hat only be here applicable):', 'label': 1,

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 ress" aflunce risk culture and capabilities in an organization. Provide  
 examples of recent yernance scenarios where the risk committee has played a  
 pivotal role in 0 bn ong! aren se < CeCctlve rs! k culture. temporary € hee',  
 'label': 0, 'confidence': 0.048953705}  
 {'text': 'Lacy gues poser cay te sulatory expectatic', 'label': 0, 'confidence':  
 0.011132191}  
 {'text': 'Ha honeny hee | mentation. (6 Ma»'k ne', 'label': 0, 'confidence':  
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 Time: 3 Hours ice cream market in Mombasa. \_ G Marks)', 'label': 1,  
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{'text': '(3 Marks)', 'label': 0, 'confidence': 0.12499432}
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{'text': 'SSORY) and any other TWO questions. (3 Marks)', 'label': 0, 'confidence': 0.13431439}
{'text': '| how it differs from the Newton-Raphson (3 Marks)', 'label': 1, 'confidence': 0.99981314}
{'text': '7 le value of the root of the function f(x) =', 'label': 1, 'confidence': 0.9847456}
{'text': 'R code that you would use to solve this (6 Marks)', 'label': 1, 'confidence': 0.99005884}
{'text': 'Me thematically) how you would generate f£0) = @exp - (0y), and further numbers from this distribution. / 7 (8 Marks)', 'label': 1, 'confidence': 0.9944238}
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{'text': 'October, 2022 Time: 3 hours ----- / any', 'label': 0, 'confidence': 0.011132191}
{'text': 'Bi 80: million yards of cloth if it uses all of iagram to illustrate your answers to the 1] 1 be ae to produce? ie mark} yet heat i in Kisumu? (2 eS)', 'label': 1, 'confidence': 0.97903615}
{'text': '[15 marks]', 'label': 0, 'confidence': 0.024214309}
{'text': 'SECTION A: Attempt ALL questions in this section', 'label': 0, 'confidence': 0.009859101}
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{'text': '(i) State FOUR importance of personal hygiene [4Mks]', 'label': 1, 'confidence': 0.9942358}
{'text': '(ii) State and explain any FIVE ways by which alcohol use raises the risk of cancer [6Mks] d. (i) State FOUR importance of personal hygiene x [4Mks]', 'label': 1, 'confidence': 0.99952054}
{'text': '(ii) State and explain any FIVE methods of Prevention and Control of HIV/AIDS [10Mks]', 'label': 1, 'confidence': 0.9830579}
{'text': 'SECTION B: Answer any TWO questions in this section', 'label': 0, 'confidence': 0.009859101}
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{'text': '(b) Describe any FIVE malaria prevention and control strategies

```

[10Mks]', 'label': 1, 'confidence': 0.9943532}

{'text': 'QUESTiICN THREE', 'label': 0, 'confidence': 0.011132191}

{'text': '(a) Giving examples for each, classify the SEX known addictive drugs and their mode of intake [10Mks]', 'label': 1, 'confidence': 0.9990096}

{'text': '(b) State and eexplain FIVE ways by which alcohol decreases resistance to HIV', 'label': 1, 'confidence': 0.9425074}

{'text': 'Infection [10Mks]', 'label': 1, 'confidence': 0.6886415}

{'text': 'QUESTION FOUR &', 'label': 0, 'confidence': 0.11982496}

{'text': '(a) Describe FIVE Goals of Antiretroviral therapy in HIV/AIDS treatments [10Mks]', 'label': 1, 'confidence': 0.99887747}

{'text': '(b) Discuss FIVE ways of positive living with HIV/AIDs [10Mks] lifestyle factors that contribute to many of such health problems? [10Mks]', 'label': 1, 'confidence': 0.9990715}

{'text': 'Yo of deaths from lifestyle diseases occur in low- and middle-', 'label': 0, 'confidence': 0.13010052}

{'text': 'Sion By ain this scenario using five reasons? [10Mks]', 'label': 0, 'confidence': 0.16782625}

{'text': 'QUESTION ONE (30 MARKS)-COMPULSORY a). Explain the following programming tools used in program development:- \\. Language translators ii Unker ii. IDE iv. Loader (4 Marks)', 'label': 1, 'confidence': 0.99968946}

{'text': 'b). Explain the following System development life cycle stages in program development. (6 Marks)', 'label': 1, 'confidence': 0.9999498}

{'text': 'i. Feasibility study ii. System investigation ili, System design', 'label': 0, 'confidence': 0.24650921}

{'text': 'Cc). Differentiate between pseudo code and a flowchart. (2 Marks)', 'label': 1, 'confidence': 0.99055827}

{'text': '(. Using a in a pseudo code and a flowchart, write a solution of a problem to calculate the area of a circle using the formula area = J) r°, where JI=3.14 and r is radius. (6 Marks)', 'label': 1, 'confidence': 0.999742}

{'text': 'wr, a structured program that calculates the area of a circle using the formula area = r?, where J1=3.14', 'label': 1, 'confidence': 0.99939466}

{'text': 'D andris rads. (6 Marks f). Differentiate between structured programming and modular programming. (4 Marks)', 'label': 1, 'confidence': 0.95814794}

{'text': 'g). Outiine any two benefits of structured programming. (2 Marks)', 'label': 1, 'confidence': 0.9927006}

{'text': 'in the following principles used in programming: (4 Marks)', 'label': 1, 'confidence': 0.9920922}

{'text': '[in programming, giving an illustration using a flowchart for each. ia (6 Marks)', 'label': 1, 'confidence': 0.99549544}

{'text': 'QUESTION 1 [30 MARKS] COMPULSORY a) Explain the two types of functions used in C program, giving an example of each. (4 Marks)', 'label': 1, 'confidence': 0.9949462}

{'text': 'b) Write a program in C programming language that allows a user to input a whole number of X in main program and uses two user defined functions name, square() to compute the square of the number X and cube() to compute the cube of X, then veer the X, result of the square and cube in the main program. Use if() to select each subprogram at a time to execute. ; (10 Marks)', 'label':

```

1, 'confidence': 0.9999721}
{'text': 'c) Explain the program structure of a C program, giving relevant
examples using the program in Q1 (b). (5 Marks)', 'label': 1, 'confidence':
0.9999877}
{'text': 'd) Differentiate between an array, a record, a pointer and a file,
then write a C program that implements an array, a record and a file using a
structure (record) consisting of itemname and itemcode to store data of 20 items
in a retail shop computer and displays a list of the 20 items details reading
from file. Given that item name is a string of 25 characters, item code is a
number of 4 digits, record name is item, logical file is itemfile, and physical
file is "C:\\item\\itemf.dat'. (11 Marks)', 'label': 1, 'confidence': 0.999884}
{'text': 'QUESTION 2 [20 MARKS] a) Explain the three concepts used in structured
programming. (9 Marks)', 'label': 1, 'confidence': 0.980022}
{'text': 'b) Write a C program that that has three subprograms, first subprogram
to input a list of 18 customers names as string and ; deposit as number with
decimal point, second subprogram to compute sum of the deposit of all customers
and third ubprogram to display the list the 18 customers names and deposit, and
sum of deposits. (11 Marks)', 'label': 1, 'confidence': 0.9999039}
{'text': 'sed in structured programming. (9 Marks)', 'label': 1, 'confidence':
0.6850065}
{'text': '(0) , npute the area of acircle and to compute perimeter of a circle,
(11. Marks)', 'label': 1, 'confidence': 0.9994222}
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{'text': '"Paul" and "John" respectively, Explain the following (8 marks)',
'label': 1, 'confidence': 0.998928}
{'text': '; name, idumber, and course and then (8 Marks)', 'label': 1,
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{'text': '(6 Marks)', 'label': 0, 'confidence': 0.12499432}

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-----EXTRACTED QUESTIONS-----

(a) For each of the following scenarios, use a supply and demand diagram to illustrate the effect of a given shock on the equilibrium price and quantity u in the specified competitive market. Explain whether there is a shift in the demand curve, the supply, or neither i) An unexpected temporary heat wave hits the South Coast. Show the effect in the ice cream market in Mombasa. (3 Marks)

ii) The government introduces a tax on ice cream which is paid by producers.

What is the effect in the ice cream market? (3 Marks)

(b) The price elasticity of demand  $-0.45$  in the long run. Why would the demand for crude oil be price in the short-run and (3 Marks)

elastic in the long run than in the short run? Briefly explain.

(c) Briefly explain why a supply shock leads to stagflation. (3 Marks)

(d) In the context of financial markets, distinguish between informational efficiency. (4 Marks)

Examine the importance of data quality in risk analytics, discuss the potential

impact of incomplete or incorrect data on risk prediction models, and propose strategies for mitigating these issues. (4 marks)

. Analyze the 2 limitations of different machine learning algorithms (such as decision trees, neural networks, and support vector machines) in predicting credit default risk (4 marks)

Besides its involvement in stress testing, analyze three other ways that the risk committee is able to influence risk culture and capabilities in an organization. Provide examples of recent corporate governance scenarios where the risk committee has played a pivotal role in fostering an effective risk culture. (6 Marks)

Critically assess the benefits and criticisms of regulatory frameworks for banks and insurance companies. Use contemporary examples to illustrate your points and focus on the effects of recent changes in regulatory expectations, such as the increased focus on individual accountability and documentation. (8 marks)

"Risk identification forms the foundation of comprehensive risk management. Given the evolution of risks in the modern global context, including technological, environmental, and geopolitical risks, traditional risk identification methods may need to be supplemented or rethought."

© 4-1) Identify seven reasons why man is consider' naa (emote . fall o! J ie Biblical apie? eee ay, (6 marks)

b) State six causes of sin from y. «) Wdentify ways in which Christian (7 marks) or in EgyPt strate his power in he hey were in the desert (8 marks) rshipped God when tt faster (5 marks)

2a) Name seven plagues that God used to de b) Identify eigh ) Give the similarities between the Jewish Passover an t ways in which the Israelites wo! id Christians i (7 marks)

3 a) Give seven ways in which Elijah succeeded as a Prophet of God. 5) Outline the conditions that made it difficult for Prophet Elijah to stop idolatry 1" Israel (7 marks)

c) Identify six ways in which Christians enhance the true worship of God today (6 mark)

diay One y Par ofl Md ; . - 4a) Explain the | teachings of prophet Amos on Israel election. (7 marks)

b) State six ways in which God would punish Israel for her evils according to Amos. (6 marks)

Jessons Christians learn from Israel's election. (6 marks)

to handle cases of dishonesty. (8 marks)

Gat Gof veuy : aes ssf ? © marks)

Geittns (Smks)

(©) Give five reasons why Christians go to church of announced his

(b) Outline what Angel Gabriel revealed about John the Baptist when he (7mks) birth to Zachariah (8mks)

2. (a) Explain the healing of the paralytic in Luke 5:18-26 7mks)

(b) List seven expectations of the Jews concerning the Messiah ( ° Ss

(6) In what ways are Christians preparing for th coming of the Messiah Gmks)

3: (©) Give six reasons that the Jewish leaders had to have Jesus arrested and even executed (6mks)

(b) State 8 extra-ordinary things that took place at the time of Jesus

crucified/execution (8mks)

(c) State six problems that Christians today encounter while trying to practice their faith (6mks)

(b) Narrate Peter's message on the day of Pentecost (8mks)

(c) Give reasons why people abuse alcohol and other drugs today (5mks)

5. (a) State the role of the Holy Spirit as taught by Jesus (8mks)

(b) State Any Seven characteristics of Love (7mks)

(c) List any 5 gifts of the Holy Spirit (5mks)

(b) What are the causes of disunity in the church today? (6mks)

(c) How is the unity of believers expressed in the church today (7mks)

Define Constitutionalism. Answer All questions in this Section. 2. Identify Feudal Monarchy as a form of government. (1 mark)

A. Which is the correct one where the remains of Kenyapithecus were discovered in Kenya: (2 marks)

A. State two advantages (make remarks) obtained from the Kenyan coast during the long distance trade, (2 marks)

2. Discuss the ways the government may limit one's freedom of movement in Kenya. (1 mark)

Discuss (2 marks)

State two types of religion exercised in Kenya. (2-marks)

40. Give an account which marked the colonial sphere of influence in East Africa in 1886. (1 mark)

1. Give two reasons why the British used indirect rule in some parts of Kenya (2-marks)

Give two features of the political organizations which were formed in Kenya before 1939. (2 marks)

1. Give one special court in Kenya. (1 mark)

1. Beside unity, name the other pillar of Nyayoism. (1 mark)

\* 1. Identify two education commissions in Kenya since independence. (2:marks)

Outline one function of the speaker of the County Assembly

State two types of government expenditure in Kenya. (2 marks)

"Answer Any three questions in this Section. of the Luo from their original homeland into Kenya. (5 marks)

18. a) Give five reasons for the migration of the Somali in Kenya during the pre-colonial period. (10 marks)

b) Describe the political organization of (3 marks)

19, a) State three factors which enabled the Arabs to sail from Oman to the Kenyan Coast. (12 marks)

b) Explain six effects of long distance trade on the people of Kenya 20. a)

State five terms of the Devonshire White Paper of 1923. (5 marks)

b) Explain five problems faced by Africans in Urban Centres during the colonial period. (10 marks)

21. a) Give five features of African Socialism in Kenya. (5 marks)

1. Discuss the political organization in Kenya since independence. (10marks)

1. Explain five factors that have influenced industrial

Answer Any Two questions from this section. 1. A person should meet to qualify to be a citizen by birth in Kenya. (5 marks)

22. a) Give three conditions a person should meet to qualify to be a

) Explain six features of the Constitution of Kenya (2010)

23. a) Outline the composition of the County Executive Committee, (6 marks)

) Describe the law making process at the National level in Kenya. (12 marks)

24. a) State five objectives of Devolution. b) Explain five ways in which the government of Kenya ensures effective utilization of public funds. (10 marks)

Examine the importance of data quality in risk analytics, discuss the potential impact of incomplete or incorrect data on risk prediction models, and propose strategies for mitigating these issues. (4 marks)

. Analyze the 2 limitations of different machine learning algorithms (such as decision trees, neural networks, and support vector machines) in predicting credit default risk (4 marks)

Besides its involvement in stress testing, analyze three other ways that the risk committee is able to influence risk culture and capabilities in an organization. Provide examples of recent corporate governance scenarios where the risk committee has played a pivotal role in fostering an effective risk culture. (6 Marks)

Critically assess the benefits and criticisms of regulatory frameworks for banks and insurance companies. Use contemporary examples to illustrate your points and focus on the effects of recent changes in regulatory expectations, such as the increased focus on individual accountability and documentation. (8 marks)

"Risk identification forms the foundation of comprehensive risk management.

Given the evolution of risks in the modern global context, including technological, environmental, and geopolitical risks, traditional risk identification methods may need to be supplemented or rethought."

(a) For each of the following scenarios, use a supply and demand diagram to illustrate the effect of a given shock on the equilibrium price and quantity in the specified competitive market. Explain whether there is a shift in the demand curve, the supply, or neither i) An unexpected temporary heat wave hits the South Coast. Show the effect in the ice cream market in Mombasa. (3 Marks) ii) The government introduces a tax on ice cream which is paid by producers. What is the effect in the ice cream market? (3 Marks)

(b) The price elasticity of demand is -0.45 in the long run. Why would the demand for crude oil be more elastic in the short-run and (3 Marks)

elastic in the long run than in the short run? Briefly explain.

(c) Briefly explain why a supply shock leads to stagflation. (3 Marks)

(d) In the context of financial markets, distinguish between informational efficiency. (4 Marks)

(a) Suppose Kisumu can produce 120 million bushels of wheat if it uses all of its productive resources in the wheat industry, or 80 million yards of cloth if it uses all of its resources in the cloth industry. Use a diagram to illustrate your answers to the following questions. Label the diagram and explain in words.

(Place wheat on the x-axis) {2 marks}

(ii) Suppose Kisumu's consumers choose to consume 70 million bushels of wheat. How much cloth will Kisumu then be able to produce? {2 marks}

(iii) What is the true price of a bushel of wheat in Kisumu? (2 marks)

(iv) Can Kisumu produce 60 million bushels of wheat and 50 million yards of cloth?



If so why? {2 marks}

(b) If you buy 100 shares of East African Breweries stock

(i) To what are you entitled? {3 marks}

(ii) What is the most money you can make on this investment over the next year? {2 marks}

(iii) If you paid KES180 per share, what is the most money you could lose over the year? {2 marks} [15 marks]

ME. |» OlCa Ss ign eauite 6.19. P.O. siete AR r. ANSWER ALL Got aaa (ene + a) Relate ¶| at re message of Peter on the Day of Pentecost. (10 Marks)

b) In what al ways é 2 iid the coming of the Holy Spirit transform the life of Peter on the Day of ~ Pentecost? (5 Marks)

c) What activities of the church in Kenya show that the Holy Spirit is working among them? (5 Marks)

2a) From the teachings of Jesus, what role would the Holy Spirit play? (8 Marks)

b) Describe the fruits of the Holy Spirit according to Galatians 5:22-26. (6 Marks)

c) In what ways do Christians demonstrate the fruit of generosity? (6 Marks)

3a) Explain how the unity of believers is expressed in the symbol of the body of Christ. (7 Marks)

b) State teachings of Peter concerning the people of God. (1\* Peter 2:9- 10) (7 Marks)

c) HBw do churches discipline those who cause disunity in the church today? (© Marks)

a) According to Isaiah's prophecy state the names given to the Messiah, ic b) How did Jesus fulltill Isaiah's prophecy of the suffering servant eat ¶) How should Christians respond to those who are opposing them? (8 mks)

a) Outline the role of John the Baptist. (7 mks)

b) State the lessons that Christians learn from the annunciation of the birth of John the Baptist. (7:mks)

c) State the reasons: why Jesus was baptized yet he was sinless. (6 mks)

oy a) Narrate the transfiguration of Jesus. (8 mks)

b) List the occasions when Jesus was tempted. (6 mks)

¶) Outline the reasons why Christians should repent their sins. (6 mks)

b) Why did Jesus use parables in his teachings: (6 mks)

¶) Outline the lessons that Christians learn from the above parable. (6mks)

S . a) List the fruits of the Holy Spirit as taught by St. Paul (7 mks)

b) Describe the events that took place on the day of pentacost (7 mks)

¶) Describe how the unity of believers is expressed in the image of the vine and the branches.(John 15: 1-10) (7 mks)

ae y ne' lical stories of creation it in Biblical creation ies given to human beings by (a mks)

a) Describe the call of Abraham. mks)

b) Explain the characteristics of a covenant. eras)

¶) Identify seven examples of covenants made in Kenya today (7m 3. a) Give five reasons why Israelites demanded for a king. (5 mks)

b) What lessons can modern political leaders learn from king David. (8 mks)

¢) How do Christians in Kenya demonstrate their faith in God? (7 mks)

4. a) State four differences between traditional African prophets and the Old Testament prophets. 5: (8 mks)

b) Outline the social injustices condemned by prophet Amos in Israel. In what ways is the church in Kenya promoting justice in society? (6 mks)

Re, a) With reference to the teaching of prophet Jeremiah on judgement, State six ways in which God would punish the people of Judah. (6 mks)

b) In what ways did prophet Jeremiah suffer while carrying out his work in Judah. (6 mks)

c) List eight moral values that Christians can acquire from the life of prophet Jeremiah. (8 mks)

6. a) List eight places used for worship in Traditional African communities. (8 mks)

b) Give six reasons why sacrifices were made in Traditional African communities. (6 mks)

c) How do Christians in Kenya show respect for places of worship? (6 mks)

STRUCTIONS, : 1. State the Jewish expectation concerning the Messiah, (6mks)

b) Describe the events that were associated with the birth of John the Baptist, (6mks)

©) Give reasons why the birth of a child is celebrated in modern society, (6mks)

2. a) Describe the transfiguration of Jesus as recorded in Luke 9:28 - 37, " (4mks)

b) Outline the instructions that Jesus gave the twelve disciples when he commissioned them

Luke 9:1-9, (7mks)

c) Give reasons why disciples are called today. (5mks)

Identify areas of conflicts between Jesus and the Jewish leaders which eventually led to his death. (6mks)

(were the reactions of the people who witnessed Jesus crucifixion, (7mks)

Significance of passion, death and resurrection of Jesus to Christians today. - the teaching of Jesus on the vine and branches, (7mks)

five ways in which the Holy spirit manifested himself on the day of Pentecost. [are the reasons why some Christians live in Christianity today, (8mks)

causes of conflict between parents and children in the contemporary society? (6mks)

Government. (2marks)

Give one social activity that was practiced by man during the New Stone Age period, (1mark)

State two effects of the Land Enclosure System in Britain during the Agrarian Revolution. (2marks)

Highlight two negative effects of the trans-Saharan trade, (2marks)

Name the first woman astronaut to travel into space. (1mark) 2

State two importance's of the radio as a form of communication. (2marks)

Give two ways how scientific inventions have negatively impacted on Agriculture. (2marks)

What was the title given to the highest political and religious leader of the Shona? (1mark)

Identify one chartered company that was used by the Europeans to acquire

colonies in  
Africa. (1mark)

State one way how the Lochner treaty benefited King Lewanika individually.  
(1mark)

- Outline one social factor that led to the rise of Nationalism in Africa.  
(1mark)

2. State one military alliance that was formed by European nations before the First World War. (1mark)

- Name two permanent member states of the United Nations Security Council.  
(2marks)

State one way how the Cold War was witnessed in Africa. (1mark)

Name two military alliances which were formed during the cold war. (2marks)

. Outline two reasons why United States of America did not join the First World War until 1917. (2marks)

Name the event that marked the end of Second World Wars. (1mark)

(a) Suppose that you have the following investment plans  
1) You deposit KES10,000 every end of the year for next 10 years  
II) You deposit KES10,000 at the beginning of every year for the next 10 years  
Which plan would you go for and why given that the investment earns 7.5% semi-annually? {7 marks}

(b) Table 3 shows the quantity and price of bread and butter produced in country Z between 2009 and 2013. Table 3: Price and quantity of bread and butter produced in country Z that only bread here applicable):  
GDP {2009 and 2013 {2 marks} marks} [15 marks]

DSA 8105: FUNDAMENTAL CONCEPTS IN FINANCE AND ECONOMICS 6 September 2021 Time: 3 Hours ice cream market in Mombasa. (6 Marks)

Briefly explain. (3 Marks)

How it differs from the Newton-Raphson (3 Marks)

7. The value of the root of the function  $f(x) = x^2 - 2x + 1$  is  
Write the R code that you would use to solve this (6 Marks)

Mathematically how you would generate  $f(x) = \exp(-x)$ , and further numbers from this distribution. (8 Marks)

Bi 80: million yards of cloth if it uses all of the diagram to illustrate your answers to the 1] How much cloth to produce? (1 mark) yet heat in Kisumu? (2 marks)

QUESTION ONE a. State and explain THREE indirect modes of transmission of communicable diseases [3Mks] - Highlight THREE levels of prevention of communicable diseases [3Mks]

(i) State FOUR importance of personal hygiene [4Mks]

(ii) State and explain any FIVE ways by which alcohol use raises the risk of cancer [6Mks]

d. (i) State FOUR importance of personal hygiene [4Mks]

(ii) State and explain any FIVE methods of Prevention and Control of HIV/AIDS [10Mks]

(a) State and explain any TEN factors that affect malaria transmission [10Mks]

(b) Describe any FIVE malaria prevention and control strategies [10Mks]

(a) Giving examples for each, classify the SEX known addictive drugs and their mode of intake [10Mks]

(b) State and explain FIVE ways by which alcohol decreases resistance to HIV Infection [10Mks]

- (a) Describe FIVE Goals of Antiretroviral therapy in HIV/AIDS treatments [10Mks]
- (b) Discuss FIVE ways of positive living with HIV/AIDS [10Mks] lifestyle factors that contribute to many of such health problems? [10Mks]

QUESTION ONE (30 MARKS)-COMPULSORY a). Explain the following programming tools used in program development:- \. Language translators ii Unker ii. IDE iv.

Loader (4 Marks)

b). Explain the following System development life cycle stages in program development. (6 Marks)

Cc). Differentiate between pseudo code and a flowchart. (2 Marks)

(. Using a in a pseudo code and a flowchart, write a solution of a problem to calculate the area of a circle using the formula  $\text{area} = J) r^2$ , where  $J1=3.14$  and  $r$  is radius. (6 Marks)

wr, a structured program that calculates the area of a circle using the formula  $\text{area} = r^2$ , where  $J1=3.14$

D andris rads. (6 Marks f). Differentiate between structured programming and modular programming. (4 Marks)

g). Outiine any two benefits of structured programming. (2 Marks)

in the following principles used in programming: (4 Marks)

[in programming, giving an illustration using a flowchart for each. ia (6 Marks)

QUESTION 1 [30 MARKS] COMPULSORY a) Explain the two types of functions used in C program, giving an example of each. (4 Marks)

b) Write a program in C programming language that allows a user to input a whole number of  $X$  in main program and uses two user defined functions name, square() to compute the square of the number  $X$  and cube() to compute the cube of  $X$ , then veer the  $X$ , result of the square and cube in the main program. Use if() to select each subprogram at a time to execute. ; (10 Marks)

c) Explain the program structure of a C program, giving relevant examples using the program in Q1 (b). (5 Marks)

d) Differentiate between an array, a record, a pointer and a file, then write a C program that implements an array, a record and a file using a structure (record) consisting of itemname and itemcode to store data of 20 items in a retail shop computer and displays a list of the 20 items details reading from file. Given that item name is a string of 25 characters, item code is a number of 4 digits, record name is item, logical file is itemfile, and physical file is "C:\item\itemf.dat'. (11 Marks)

QUESTION 2 [20 MARKS] a) Explain the three concepts used in structured programming. (9 Marks)

b) Write a C program that that has three subprograms, first subprogram to input a list of 18 customers names as string and ; deposit as number with decimal point, second subprogram to compute sum of the deposit of all customers and third ubprogram to display the list the 18 customers names and deposit, and sum of deposits. (11 Marks)

sed in structured programming. (9 Marks)

(0) , npute the area of acircle and to compute perimeter of a circle, (11. Marks)

"Paul" and "John" respectively, Explain the following (8 marks)

; name, idumber, and course and then (8 Marks)

----- 202 questions, extracted from 346 lines -----

```
[ ]: text = []
all_questions = []

for line in refined.split('\n'):
    if not line.strip(): # Skip empty lines
        continue

    features = features_from_text_line(line) # Assuming this function
    ↪transforms text into features
    prediction = DTmodel.predict(features) # Predict the label

    # Get the leaf index for each test sample and thus determine the output node
    leaf_index = DTmodel.apply(features)[0]

    # Calculate the proportion of the same class in the leaf node with smoothing
    # This requires having access to the training data counts or recorded leaf
    ↪information
    leaf_counts = np.bincount(y_train[DTmodel.apply(X_train) == leaf_index],
    ↪minlength=len(np.unique(y_train)))
    smoothed_leaf_counts = leaf_counts + 1 # Adding 1 as a smoothing factor
    total_leaf_samples = smoothed_leaf_counts.sum()
    confidence = smoothed_leaf_counts[prediction[0]] / total_leaf_samples

    text.append({'text': line, 'label': prediction[0], 'confidence':
    ↪confidence})

    # Consider it a question if the label is 1 and confidence is above a
    ↪certain threshold
    threshold = 0.5 # Define your threshold here
    if prediction[0] == 1 and confidence > threshold:
        all_questions.append(line)

# Convert list of dictionaries to DataFrame
df = pd.DataFrame(text)

# Save to CSV, excluding the index
df.to_csv('predictions/DTmodel.csv', index=False, columns=['text', 'label',
    ↪'confidence'])

print("\n-----OUTPUT-----")
for t in text:
    print(t)

print("\n-----EXTRACTED QUESTIONS-----")
for q in all_questions:
```

```

print(q)

print("\n----- " + str(len(all_questions)) + " questions, extracted from_
↳" + str(len(text)) + " lines -----")

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-----OUTPUT-----

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diagram to illustrate the effect of a given shock on the equilibrium price and
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in the demand curve, the supply, or neither i) An unexpected temporary heat wave
hits the South Coast. Show the effect in the ice cream market in Mombasa. (3
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{'text': 'Page 1 of 4 (7 marks)', 'label': 0, 'confidence': 0.8333333333333334}

{'text': '© 4-1) Identify seven reasons why man is consider' naa (emote . fall o! J ie Biblical apie? eee ay, (6 marks)', 'label': 1, 'confidence': 0.9980657640232108}

{'text': 'b) State six causes of sin from y. «) Wdentify ways in which Christian (7 marks)', 'label': 1, 'confidence': 0.9980657640232108}

{'text': 'or in EgyPt strate his power in he hey were in the desert (8 marks)', 'label': 1, 'confidence': 0.9980657640232108}

{'text': 'rshipped God when tt faster (5 marks)', 'label': 1, 'confidence': 0.9980657640232108}

{'text': '2a) Name seven plagues that God used to de b) Identify eigh ) Give the similarities between the Jewish Passover an t ways in which the Israelites wo!

id Christians i (7 marks)', 'label': 1, 'confidence': 0.9980657640232108}

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{'text': 'c) Identify six ways in which Christians enhance the true worship of God today (6 mark)', 'label': 1, 'confidence': 0.9583333333333334}

{'text': 'diay One y Par ofl Md ; . - 4a) Explain the | teachings of prophet Amos on Israel election. (7 marks)', 'label': 1, 'confidence': 0.9980657640232108}

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{'text': '(b) State 8 extra-ordinary things that took place at the time of Jesus crucified/execution (8mks)', 'label': 1, 'confidence': 0.9855072463768116}

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{'text': '(b) Narrate peters message on the day of Pentecost (8mks)', 'label': 1, 'confidence': 0.9855072463768116}

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{'text': '. Give one special court in Kenya. (1 mark)', 'label': 1, 'confidence': 0.9}

{'text': '| Beside unity, name the other pillar of Nyayoism. (1 mark)', 'label': 1, 'confidence': 0.9583333333333334}

{'text': '\* Identify two education commissions in Kenya since independence. (2:marks)', 'label': 1, 'confidence': 0.9980657640232108}

{'text': '(1 mark)', 'label': 0, 'confidence': 0.9615384615384616}

{'text': 'Outline one function of the speaker of the County Assembly', 'label': 1, 'confidence': 0.6666666666666666}

{'text': 'State two types of government expenditure in Kenya. (@ marks)', 'label': 1, 'confidence': 0.9980657640232108}

{'text': 'SECTION B: (45 MARKS)', 'label': 0, 'confidence': 0.9984825493171472}

```
{
  'text': '"Answer Any three questions in this Section. of the Luo from their original homeland into Kenya. (5 marks)', 'label': 1, 'confidence': 0.9980657640232108}
{
  'text': '18. a) Give five reasons for the migration of the Somali in Kenya during the pre-colonial period. (10 marks)', 'label': 1, 'confidence': 0.9980657640232108}
{
  'text': 'b) Describe the political organization of the Luo (3 marks)', 'label': 1, 'confidence': 0.9980657640232108}
{
  'text': '19, a) State three factors which enabled the Arabs to sail from Oman to the Kenyan Coast. (12 marks)', 'label': 1, 'confidence': 0.9980657640232108}
{
  'text': 'b) Explain six effects of long distance trade on the people of Kenya (6 marks)', 'label': 1, 'confidence': 0.9980657640232108}
{
  'text': '20. a) State five terms of the Devonshire White Paper of 1923. (5 marks)', 'label': 1, 'confidence': 0.9980657640232108}
{
  'text': 'b) Explain five problems faced by Africans in Urban Centres during the colonial period. (10 marks)', 'label': 1, 'confidence': 0.9980657640232108}
{
  'text': '21. a) Give five features of African Socialism in Kenya. (5 marks)', 'label': 1, 'confidence': 0.9980657640232108}
{
  'text': 'b) Explain five factors that have influenced industrialization in Kenya since independence. (10 marks)', 'label': 1, 'confidence': 0.9855072463768116}
{
  'text': '22. a) Explain five factors that have influenced industrialization in Kenya since independence. (10 marks)', 'label': 1, 'confidence': 0.9}
{
  'text': 'Answer Any Two questions from this section. A person should meet to qualify to be a citizen by birth in Kenya. (6 marks)', 'label': 1, 'confidence': 0.9980657640232108}
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  'text': '22. a) Give three conditions for a person to be a citizen by birth in Kenya. (12 marks)', 'label': 1, 'confidence': 0.9980657640232108}
{
  'text': 'b) Explain six features of the Constitution of Kenya (2010)', 'label': 1, 'confidence': 0.9583333333333334}
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{
  'text': 'b) Describe the law making process at the National level in Kenya. (12 marks)', 'label': 1, 'confidence': 0.9980657640232108}
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  'text': '(5 marks)', 'label': 0, 'confidence': 0.8333333333333334}
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  'text': '24, a) State five objectives of Devolution. b) Explain five ways in which the government of Kenya ensures effective utilization of public funds. (10 marks)', 'label': 1, 'confidence': 0.9980657640232108}
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{'text': 'This examination consists of FIVE questions.', 'label': 0, 'confidence': 0.9984825493171472}

{'text': 'Answer Question ONE (COMPULSORY) and any other TWO questions.', 'label': 0, 'confidence': 0.9984825493171472}

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{'text': '. Analyze the 2 limitations of different machine learning algorithms (such as decision trees, neural networks, and support vector machines) in predicting credit default risk (4 marks)', 'label': 1, 'confidence': 0.9980657640232108}

{'text': 'Besides its involvement in stress testing, analyze three other ways that the risk committee is able to influence risk culture and capabilities in an organization. Provide examples of recent corporate governance scenarios where the risk committee has played a pivotal role in fostering an effective risk culture. (6 Marks)', 'label': 1, 'confidence': 0.9980657640232108}

{'text': 'Critically assess the benefits and criticisms of regulatory frameworks for banks and insurance companies. Use contemporary examples to illustrate your points and focus on the effects of recent changes in regulatory expectations, such as the increased focus on individual accountability and documentation. (8 marks)', 'label': 1, 'confidence': 0.9980657640232108}

{'text': '"Risk identification forms the foundation of comprehensive risk management. Given the evolution of risks in the modern global context, including technological, environmental, and geopolitical risks, traditional risk identification methods may need to be supplemented or rethought."', 'label': 1, 'confidence': 0.9583333333333334}

{'text': 'Page 1 of 4', 'label': 0, 'confidence': 0.9984825493171472}

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{'text': 'DATE: 6% September 2021', 'label': 0, 'confidence': 0.9984825493171472}

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{'text': 'Ibs This examination consists of FIVE questions. 2s Answer Question ONE (COMPULSORY) and any other Two ques e', 'label': 0, 'confidence': 0.9984825493171472}

{'text': 'QUESTION ONE (20 MARKS)', 'label': 0, 'confidence': 0.9984825493171472}

{'text': '(a) For each of the following scenarios, use a supply and demand diagram to illustrate the effect of a given shock on the equilibrium price and quantity u in the specified competitive market. Explain whether there is a shift in the demand curve, the supply, or neither i) An unexpected temporary heat wave

hits the South Coast. Show the effect in the ice cream market in Mombasa. (3 Marks)', 'label': 1, 'confidence': 0.9980657640232108}

{'text': 'ii) The government introduces a tax on ice cream which is paid by producers. What is the effect in the ice cream market? (3 Marks)', 'label': 1, 'confidence': 0.9980657640232108}

{'text': 'for crude oil in country H has been estimated to be -0.06', 'label': 0, 'confidence': 0.9615384615384616}

{'text': '(b) The price elasticity of demand -0.45 in the long run. Why would the demand for crude oil be price in the short-run and (3 Marks)', 'label': 1, 'confidence': 0.9980657640232108}

{'text': 'elastic in the long run than in the short run? Briefly explain.', 'label': 1, 'confidence': 0.9}

{'text': '(c) Briefly explain why a supply shock leads to stagflation. (3 Marks)', 'label': 1, 'confidence': 0.9980657640232108}

{'text': 'n economic efficiency and', 'label': 0, 'confidence': 0.9615384615384616}

{'text': '(d) In the context of financial markets, distinguish between informational efficiency. (4 Marks)', 'label': 1, 'confidence': 0.9980657640232108}

{'text': 'Page 1 of 3', 'label': 0, 'confidence': 0.9984825493171472}

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{'text': 'Attempt any Four (4) questions', 'label': 0, 'confidence': 0.9984825493171472}

{'text': 'Question 1', 'label': 0, 'confidence': 0.9984825493171472}

{'text': '(a) Suppose Kisumu can produce 120 million bushels of wheat if it uses all of its productive resources in the wheat industry, or 80 million yards of cloth if it uses all of its resources in the cloth industry. Use a diagram to illustrate your answers to the following questions. Label the diagram and explain in words.', 'label': 1, 'confidence': 0.9583333333333334}

{'text': '(i) Assuming constant opportunity costs, draw Kisumu's production-possibility curve.', 'label': 0, 'confidence': 0.9615384615384616}

{'text': '(Place wheat on the x-axis) {2 marks}', 'label': 1, 'confidence': 0.9980657640232108}

{'text': '(ii) Suppose Kisumu's consumers choose to consume 70 million bushels of wheat.', 'label': 1, 'confidence': 0.9583333333333334}

{'text': 'How much cloth will Kisumu then be able to produce? {2 mark}', 'label': 1, 'confidence': 0.8}

{'text': '(iii) What is the true price of a bushel of wheat in Kisumu? (2 marks)', 'label': 1, 'confidence': 0.9980657640232108}

{'text': '(iv) Can Kisumu produce 60 million bushels of wheat and 50 million yards of cloth?', 'label': 1, 'confidence': 0.9583333333333334}

{'text': 'If so why? {2 marks}', 'label': 1, 'confidence': 0.9980657640232108}

{'text': '(b) If you buy 100 shares of East African Breweries stock', 'label': 1, 'confidence': 0.9583333333333334}

{'text': '(i) To what are you entitled? {3 marks}', 'label': 1, 'confidence': 0.9980657640232108}

{'text': '(ii) What is the most money you can make on this investment over the next year? {2 marks}', 'label': 1, 'confidence': 0.9980657640232108}

{'text': '(iii) If you paid KES180 per share, what is the most money you could lose over the year? {2 marks} [15 marks]', 'label': 1, 'confidence': 0.9980657640232108}

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{'text': 'ME. |» OlCa Ss ign eauite 6.19. P.O. siete AR r. ANSWER ALL Got aaa (ene + a) Relate ¢| at re message of Peter on the Day of Pentecost. (10 Marks)', 'label': 1, 'confidence': 0.9980657640232108}

{'text': 'b) In what al ways é 2 iid the coming of the Holy Spirit transform the life of Peter on the Day of ~~, 'label': 1, 'confidence': 0.9583333333333334}

{'text': 'Pentecost? (5 Marks)', 'label': 1, 'confidence': 0.9980657640232108}

{'text': 'c) What activities of the church in Kenya show that the Holy Spirit is working among them? (5 Marks)', 'label': 1, 'confidence': 0.9980657640232108}

{'text': '2a) From the teachings of Jesus, what role would the Holy Spirit play? (8 Marks)', 'label': 1, 'confidence': 0.9980657640232108}

{'text': 'b) Describe the fruits of the Holy Spirit according to Galatians 5:22-26. (6 Marks)', 'label': 1, 'confidence': 0.9980657640232108}

{'text': 'c) In what ways do Christians demonstrate the fruit of generosity? (6 Marks)', 'label': 1, 'confidence': 0.9980657640232108}

{'text': '3a) Explain how the unity of believers is expressed in the symbol of the body of Christ. (7 Marks)', 'label': 1, 'confidence': 0.9980657640232108}

{'text': 'b) State teachings of Peter concerning the people of God. (1\* Peter 2:9- 10) (7 Marks)', 'label': 1, 'confidence': 0.9980657640232108}

{'text': 'c) HBw do churches discipline those who cause disunity in the church today? (© Marks)', 'label': 1, 'confidence': 0.9980657640232108}

{'text': 'a) According to Isaiah's prophecy state the names given to the Messiah, ic b) How did Jesus fultill Isaiah's prophecy of the suffering servant eat ¢) How should Christians respond to those who are opposing them? (8 mks)', 'label': 1, 'confidence': 0.9855072463768116}

{'text': 'a) Outline the role of John the Baptist. (7 mks)', 'label': 1, 'confidence': 0.9855072463768116}

{'text': 'b) State the lessons that Christians learn from the annunciation of the birth of John the', 'label': 1, 'confidence': 0.9583333333333334}

{'text': 'Baptist. (7:mks)', 'label': 1, 'confidence': 0.6666666666666666}

{'text': 'c) State the reasons: why Jesus was baptized yet he was sinless. (6 mks)', 'label': 1, 'confidence': 0.9855072463768116}

{'text': 'oy a) Narrate the transfiguration of Jesus. (8 mks)', 'label': 1,

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{'text': 'b) List the occasions when Jesus was tempted. (6 mks)', 'label': 1, 'confidence': 0.9855072463768116}

{'text': 'c) Outline the reasons why Christians should repent their sins. (6 mks)', 'label': 1, 'confidence': 0.9855072463768116}

{'text': '4. S a) Describe the parable of the Sower. (8 mks)', 'label': 1, 'confidence': 0.9855072463768116}

{'text': 'b) Why did Jesus use parables in his teachings: (6 mks)', 'label': 1, 'confidence': 0.9855072463768116}

{'text': 'c) Outline the lessons that Christians learn from the above parable. (6mks)', 'label': 1, 'confidence': 0.9855072463768116}

{'text': 'S . a) List the fruits of the Holy Spirit as taught by St. Paul (7 mks)', 'label': 0, 'confidence': 0.9866666666666667}

{'text': 'b) Describe the events that took place on the day of pentacost (7 mks)', 'label': 1, 'confidence': 0.9855072463768116}

{'text': 'c) Describe how the unity of believers is expressed in the image of the vine and the branches.(John 15: 1-10) (7 mks)', 'label': 1, 'confidence': 0.9855072463768116}

{'text': '+ sistand2 (6mks)', 'label': 0, 'confidence': 0.75}

{'text': 'ae y ne' lical stories of creation it in Biblical creation ies given to human beings by (a mks)', 'label': 0, 'confidence': 0.5}

{'text': 'F 6 mks)', 'label': 0, 'confidence': 0.9866666666666667}

{'text': 'Kenya take care of the environment ( (8 mks)', 'label': 0, 'confidence': 0.9866666666666667}

{'text': 'a) Describe the call of Abraham. mks)', 'label': 1, 'confidence': 0.9855072463768116}

{'text': 'b) Explain the characteristics of a covenant. eras)', 'label': 1, 'confidence': 0.9583333333333334}

{'text': 'c) Identify seven examples of covenants made in Kenya today (7m 3. a) Give five reasons why Israelites demanded for a king. (5 mks)', 'label': 1, 'confidence': 0.9855072463768116}

{'text': 'b) What lessons can modern political leaders learn from king David. (8 mks)', 'label': 1, 'confidence': 0.9855072463768116}

{'text': 'c) How do Christians in Kenya demonstrate their faith in God? (7 mks)', 'label': 1, 'confidence': 0.9855072463768116}

{'text': '4. a) State four differences between traditional African prophets and the Old Testament prophets. 5: (8 mks)', 'label': 1, 'confidence': 0.9855072463768116}

{'text': '(6 mks)', 'label': 0, 'confidence': 0.75}

{'text': 'b) Outline the social injustices condemned by prophet Amos in Israel.', 'label': 0, 'confidence': 0.9615384615384616}

{'text': 'In what ways is the church in Kenya promoting justice in society? (6 mks)', 'label': 1, 'confidence': 0.6666666666666666}

{'text': 'c)', 'label': 0, 'confidence': 0.9615384615384616}

{'text': 'Re, a) With reference to the teaching of prophet Jeremiah on judgement , State six ways in which God would punish the people of Judah. (6 mks)', 'label': 1, 'confidence': 0.875}

{'text': 'b) In what ways did prophet Jeremiah suffer while carrying out his

workin Judah. (6 mks)', 'label': 1, 'confidence': 0.9855072463768116}

{'text': 'c) List eight moral values that Christians can acquire from the life of prophet Jeremiah. (8 mks)', 'label': 1, 'confidence': 0.9855072463768116}

{'text': '6. a) List eight places used for worship in Traditional African communities. (8 mks)', 'label': 1, 'confidence': 0.9855072463768116}

{'text': 'b) Give six reasons why sacrifices were made in Traditional African communities. (6 mks)', 'label': 1, 'confidence': 0.9855072463768116}

{'text': 'c) How do Christians in Kenya show respect for places of worship? (6 mks)', 'label': 1, 'confidence': 0.9855072463768116}

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{'text': 'NAME pei AMIE NMED Eliseo srssresite ADM NOW ARS iovevsvesere', 'label': 0, 'confidence': 0.9984825493171472}

{'text': 'STRU IONS, : 1. State the Jewish expectation concerning the Messiah, (6mks)', 'label': 1, 'confidence': 0.875}

{'text': 'b) Describe the events that were associated with the birth of John the Baptist, (Bmks)', 'label': 1, 'confidence': 0.9855072463768116}

{'text': '©) Give reasons why the birth of a child is celebrated in modern society, (6mks)', 'label': 1, 'confidence': 0.9855072463768116}

{'text': '2. a) Describe the transfiguration of Jesus ay recorded in Luke 9:28 - 37, " (4mks)', 'label': 1, 'confidence': 0.9855072463768116}

{'text': 'b) Outline the instructions that Jesus gave the twelve disciples when he commissioned them', 'label': 1, 'confidence': 0.9}

{'text': 'Luke 951 -9, (7mks)', 'label': 1, 'confidence': 0.75}

{'text': 'e reasons why disciples are called today. (Smks)', 'label': 1, 'confidence': 0.9855072463768116}

{'text': 'ify areas of conflicts between Jesus and the Jewish leaders which eventually led fo (6mks)', 'label': 1, 'confidence': 0.9855072463768116}

{'text': '(were the reactions of the people who witnessed Jesus crucification, (7mks)', 'label': 1, 'confidence': 0.9855072463768116}

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{'text': '(8mks)', 'label': 1, 'confidence': 0.9855072463768116}

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{'text': '(6mks)', 'label': 0, 'confidence': 0.75}

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{'text': 'NDNA Teun NANG aaa po aey EN c', 'label': 0, 'confidence': 0.9984825493171472}

{'text': 'Min: -TERMEN ERNMENT PAPER 2 iby Me "wc 'Gentity any two classifications of written sources of information on History and', 'label': 0, 'confidence': 0.9984825493171472}

{'text': 'Government. (2marks)', 'label': 1, 'confidence': 0.8}

{'text': 'Give one social activ ity that was practiced by e man during the New Stone Age period, (Imark)', 'label': 1, 'confidence': 0.75}

{'text': 'State two effects of the Land Enclosure System in Britain during the Agrarian', 'label': 1, 'confidence': 0.8}

{'text': 'Revolution. . (2marks)', 'label': 1, 'confidence': 0.8}

{'text': 'Highlight two negative effects of the trans-Saharan trade, (marks)', 'label': 1, 'confidence': 0.9980657640232108}

{'text': 'Name the first woman astronaut to travel into space. (Imark) 2', 'label': 1, 'confidence': 0.75}

{'text': 'State two importance's of the radio as a form of communication. (2marks)', 'label': 1, 'confidence': 0.875}

{'text': 'Give two ways how scientific inventions have negatively impacted on Agriculture. (2marks)', 'label': 1, 'confidence': 0.8}

{'text': 'What was the title given to the highest political and religious leader of the Shona? (Imark)', 'label': 1, 'confidence': 0.75}

{'text': 'Identify one chartered company that was used by the Europeans to acquire colonies in', 'label': 1, 'confidence': 0.6666666666666666}

{'text': 'Africa. (Imarks)', 'label': 1, 'confidence': 0.75}

{'text': 'State one way how the Lochner treaty benefited King Lewanika individually. (1mark)', 'label': 1, 'confidence': 0.8}

{'text': '- Outline one social factor that led to the rise of Nationalism in Africa. (imarks)', 'label': 1, 'confidence': 0.9855072463768116}

{'text': '2. State one military alliance that was formed by European nations before the First World War. (Imark)', 'label': 1, 'confidence': 0.6666666666666666}

{'text': '- Name two permanent member states of the United Nations Security Council. (2marks)', 'label': 1, 'confidence': 0.9855072463768116}

{'text': 'State one way how the Cold War was witnessed in Africa. (Imark)', 'label': 1, 'confidence': 0.8}

{'text': 'Name two military alliances which were formed during the cold war. (2marks)', 'label': 1, 'confidence': 0.8}

{'text': '. Outline two reasons w hy U nited States of America did not join the First World War until 1917. (2marks)', 'label': 1, 'confidence': 0.9855072463768116}

{'text': 'Name Ibe event pthay marked the end of Second World Wars. (Imarks)', 'label': 1, 'confidence': 0.75}

{'text': 'Question 5', 'label': 0, 'confidence': 0.9984825493171472}



{'text': '(a) Suppose that you have the following investment plans 1) You deposit KES10, 000 every end of the year for next 10 years', 'label': 1, 'confidence': 0.9583333333333334}

{'text': 'II) You deposit KES10, 000 at the beginning of every year for the next 10 years', 'label': 1, 'confidence': 0.6666666666666666}

{'text': 'Which plan would you go for and why given that the investment earns 7.5% semi- annually? {7 marks}', 'label': 1, 'confidence': 0.9980657640232108}

{'text': '(b) Table 3 shows the quantity and price of bread and butter produced in country Z between 2009 and 2013. le 3: Price and quantity of bread and butter produced in country z hat onlv bree here applicable):', 'label': 1, 'confidence': 0.9583333333333334}

{'text': 'GDP {2 m and 2013 {2 marks} marks} j [15 marks]', 'label': 1, 'confidence': 0.6666666666666666}

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{'text': 'FACULTY OF APPLIED SCIENCES AND TECHNOLOGY', 'label': 0, 'confidence': 0.9984825493171472}

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{'text': 'MASTER OF SCIENCE IN DATA SCIENCE AND ANALYTICS', 'label': 0, 'confidence': 0.9984825493171472}

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{'text': 'Time: 2.5 Hours a eee ey', 'label': 0, 'confidence': 0.9984825493171472}

{'text': 'Question [.', 'label': 0, 'confidence': 0.9984825493171472}

{'text': 'Bis peptic Rb "examine the incomplete or inc ts involvement in st ress" afluence risk culture and capabilities in an organization. Provide examples of recent yernance scenarios where the risk committee has played a pivotal role in 0 bn ong! aren se < CeCctlve rs! k culture. temporary € hee', 'label': 0, 'confidence': 0.9984825493171472}

{'text': 'Lacy gues poser cay te sulatory expectatic', 'label': 0, 'confidence': 0.9984825493171472}

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{'text': 'Ha honeny hee | mentation. (6 Ma»'k ne', 'label': 0, 'confidence': 0.9984825493171472}
{'text': 'Strathmore', 'label': 0, 'confidence': 0.9984825493171472}
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{'text': 'DSA 8105: FUNDAMENTAL CONCEPTS IN FINANCE AND ECONOMICS 6 Setember2021 Time: 3 Hours ice cream market in Mombasa. _ G Marks)', 'label': 0, 'confidence': 0.5}
{'text': 'Briefly explain. (3 Marks)', 'label': 0, 'confidence': 0.5}
{'text': '(3 Marks)', 'label': 0, 'confidence': 0.8333333333333334}
{'text': '(4 Marks)', 'label': 0, 'confidence': 0.8333333333333334}
{'text': 'Strathmore', 'label': 0, 'confidence': 0.9984825493171472}
{'text': 'UNIVERSITY', 'label': 0, 'confidence': 0.9984825493171472}
{'text': 'OF MATHEMATICAL SCIENCES', 'label': 0, 'confidence': 0.9984825493171472}
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{'text': 'ATIONAL TECHNIQUES IN DATA SCIENCE', 'label': 0, 'confidence': 0.9984825493171472}
{'text': 'Time: 3 Hours estions and an appendix to one of the questions.', 'label': 0, 'confidence': 0.9984825493171472}
{'text': 'SSORY) and any other TWO questions. (3 Marks)', 'label': 0, 'confidence': 0.6666666666666666}
{'text': '| how it differs from the Newton-Raphson (3 Marks)', 'label': 1, 'confidence': 0.9980657640232108}
{'text': '7 le value of the root of the function f(x) =', 'label': 1, 'confidence': 0.9583333333333334}
{'text': 'R code that you would use to solve this (6 Marks)', 'label': 1, 'confidence': 0.9980657640232108}
{'text': 'Me thematically) how you would generate f£0) = @exp - (0y), and further numbers from this distribution. / 7 (8 Marks)', 'label': 1, 'confidence': 0.9980657640232108}
{'text': 'ye', 'label': 0, 'confidence': 0.9615384615384616}
{'text': 'DSA 8105: FUNDAMENTAL & ONCEPTS IN FINANCE AND ECONOMICS', 'label': 0, 'confidence': 0.9984825493171472}
{'text': 'October, 2022 Time: 3 hours ----- / any', 'label': 0, 'confidence': 0.9984825493171472}
{'text': 'Bi 80: million yards of cloth if it uses all of iagram to illustrate your answers to the 1] 1 be ae to produce? ie mark} yet heat i in Kisumu? (2 eS)', 'label': 1, 'confidence': 0.8}
{'text': '[15 marks]', 'label': 0, 'confidence': 0.8333333333333334}
{'text': 'SECTION A: Attempt ALL questions in this section', 'label': 0, 'confidence': 0.9984825493171472}

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{'text': 'QUESTION ONE a. State and explain THREE indirect modes of transmission of communicable diseases [3Mks] \_ Highlight THREE levels of prevention of communicable diseases [3Mks]', 'label': 1, 'confidence': 0.875}

{'text': '(i) State FOUR importance of personal hygiene [4Mks]', 'label': 1, 'confidence': 0.9855072463768116}

{'text': '(ii) State and explain any FIVE ways by which alcohol use raises the risk of cancer [6Mks] d. (i) State FOUR importance of personal hygiene x [4Mks]', 'label': 1, 'confidence': 0.9855072463768116}

{'text': '(ii) State and explain any FIVE methods of Prevention and Control of HIV/AIDs [10Mks]', 'label': 1, 'confidence': 0.9855072463768116}

{'text': 'SECTION B: Answer any TWO questions in this section', 'label': 0, 'confidence': 0.9984825493171472}

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{'text': '(a) State and explain any TEN factors that affect malaria transmission [10Mks]', 'label': 1, 'confidence': 0.9855072463768116}

{'text': '(b) Describe any FIVE malaria prevention and control strategies [10Mks]', 'label': 1, 'confidence': 0.9855072463768116}

{'text': 'QUESTiCN THREE', 'label': 0, 'confidence': 0.9984825493171472}

{'text': '(a) Giving examples for each, classify the SEX known addictive drugs and their mode of intake [10Mks]', 'label': 1, 'confidence': 0.9855072463768116}

{'text': '(b) State and eexplain FIVE ways by which alcohol decreases resistance to HIV', 'label': 1, 'confidence': 0.9}

{'text': 'Infection [10Mks]', 'label': 1, 'confidence': 0.6666666666666666}

{'text': 'QUESTION FOUR &', 'label': 1, 'confidence': 0.6666666666666666}

{'text': '(a) Describe FIVE Goals of Antiretroviral therapy in HIV/AIDs treatments [10Mks]', 'label': 1, 'confidence': 0.9855072463768116}

{'text': '(b) Discuss FIVE ways of positive living with HIV/AIDs [10Mks] lifestyle factors that contribute to many of such health problems? [10Mks]', 'label': 1, 'confidence': 0.9855072463768116}

{'text': 'Yo of deaths from lifestyle diseases occur in low- and middle-', 'label': 0, 'confidence': 0.9984825493171472}

{'text': 'Sion By ain this scenario using five reasons? [10Mks]', 'label': 0, 'confidence': 0.9866666666666667}

{'text': 'QUESTION ONE (30 MARKS)-COMPULSORY a). Explain the following programming tools used in program development:- \\. Language translators ii Unker ii. IDE iv. Loader (4 Marks)', 'label': 1, 'confidence': 0.9980657640232108}

{'text': 'b). Explain the following System development life cycle stages in program development. (6 Marks)', 'label': 1, 'confidence': 0.9980657640232108}

{'text': 'i. Feasibility study ii. System investigation ili, System design', 'label': 1, 'confidence': 0.75}

{'text': 'Cc). Differentiate between pseudo code and a flowchart. (2 Marks)', 'label': 1, 'confidence': 0.9980657640232108}

{'text': '(. Using a in a pseudo code and a flowchart, write a solution of a problem to calculate the area of a circle using the formula area = J) r°, where JI=3.14 and r is radius. (6 Marks)', 'label': 1, 'confidence': 0.9980657640232108}

{'text': 'wr, a structured program that calculates the area of a circle using

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the formula area =  $r^2$ , where  $J_1=3.14$ ', 'label': 1, 'confidence':
0.9583333333333334}
{'text': 'D andris rads. (6 Marks f). Differentiate between structured
programming and modular programming. (4 Marks)', 'label': 1, 'confidence':
0.9980657640232108}
{'text': 'g). Outiine any two benefits of structured programming. (2 Marks)',
'label': 1, 'confidence': 0.9980657640232108}
{'text': 'in the following principles used in programming: (4 Marks)', 'label':
1, 'confidence': 0.9980657640232108}
{'text': '[in programming, giving an illustration using a flowchart for each. ia
(6 Marks)', 'label': 1, 'confidence': 0.9980657640232108}
{'text': 'QUESTION 1 [30 MARKS] COMPULSORY a) Explain the two types of functions
used in C program, giving an example of each. (4 Marks)', 'label': 1,
'confidence': 0.9980657640232108}
{'text': 'b) Write a program in C programming language that allows a user to
input a whole number of X in main program and uses two user defined functions
name, square() to compute the square of the number X and cube() to compute the
cube of X, then veer the X, result of the square and cube in the main program.
Use if() to select each subprogram at a time to execute. ; (10 Marks)', 'label':
1, 'confidence': 0.9980657640232108}
{'text': 'c) Explain the program structure of a C program, giving relevant
examples using the program in Q1 (b). (5 Marks)', 'label': 1, 'confidence':
0.9980657640232108}
{'text': 'd) Differentiate between an array, a record, a pointer and a file,
then write a C program that implements an array, a record and a file using a
structure (record) consisting of itemname and itemcode to store data of 20 items
in a retail shop computer and displays a list of the 20 items details reading
from file. Given that item name is a string of 25 characters, item code is a
number of 4 digits, record name is item, logical file is itemfile, and physical
file is "C:\\item\\itemf.dat'. (11 Marks)', 'label': 1, 'confidence':
0.9980657640232108}
{'text': 'QUESTION 2 [20 MARKS] a) Explain the three concepts used in structured
programming. (9 Marks)', 'label': 1, 'confidence': 0.9980657640232108}
{'text': 'b) Write a C program that that has three subprograms, first subprogram
to input a list of 18 customers names as string and ; deposit as number with
decimal point, second subprogram to compute sum of the deposit of all customers
and third ubprogram to display the list the 18 customers names and deposit, and
sum of deposits. (11 Marks)', 'label': 1, 'confidence': 0.9980657640232108}
{'text': 'sed in structured programming. (9 Marks)', 'label': 1, 'confidence':
0.6}
{'text': '(0) , npute the area of acircle and to compute perimeter of a circle,
(11. Marks)', 'label': 1, 'confidence': 0.9980657640232108}
{'text': '(4 Marks)', 'label': 0, 'confidence': 0.8333333333333334}
{'text': '"Paul" and "John" respectively, Explain the following (8 marks)',
'label': 1, 'confidence': 0.9980657640232108}
{'text': '; name, idumber, and course and then (8 Marks)', 'label': 1,
'confidence': 0.9980657640232108}
{'text': '(5 Marks)', 'label': 0, 'confidence': 0.8333333333333334}

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{'text': '(9 Marks)', 'label': 0, 'confidence': 0.8333333333333334}  
{'text': '(6 Marks)', 'label': 0, 'confidence': 0.8333333333333334}

-----EXTRACTED QUESTIONS-----

(a) For each of the following scenarios, use a supply and demand diagram to illustrate the effect of a given shock on the equilibrium price and quantity in the specified competitive market. Explain whether there is a shift in the demand curve, the supply, or neither i) An unexpected temporary heat wave hits the South Coast. Show the effect in the ice cream market in Mombasa. (3 Marks)  
ii) The government introduces a tax on ice cream which is paid by producers.

What is the effect in the ice cream market? (3 Marks)

(b) The price elasticity of demand  $-0.45$  in the long run. Why would the demand for crude oil be price in the short-run and (3 Marks)

elastic in the long run than in the short run? Briefly explain.

(c) Briefly explain why a supply shock leads to stagflation. (3 Marks)

(d) In the context of financial markets, distinguish between informational efficiency. (4 Marks)

Examine the importance of data quality in risk analytics, discuss the potential impact of incomplete or incorrect data on risk prediction models, and propose strategies for mitigating these issues. (4 marks)

. Analyze the 2 limitations of different machine learning algorithms (such as decision trees, neural networks, and support vector machines) in predicting credit default risk (4 marks)

Besides its involvement in stress testing, analyze three other ways that the risk committee is able to influence risk culture and capabilities in an organization. Provide examples of recent corporate governance scenarios where the risk committee has played a pivotal role in fostering an effective risk culture. (6 Marks)

Critically assess the benefits and criticisms of regulatory frameworks for banks and insurance companies. Use contemporary examples to illustrate your points and focus on the effects of recent changes in regulatory expectations, such as the increased focus on individual accountability and documentation. (8 marks)

"Risk identification forms the foundation of comprehensive risk management.

Given the evolution of risks in the modern global context, including technological, environmental, and geopolitical risks, traditional risk identification methods may need to be supplemented or rethought."

© 4-1) Identify seven reasons why man is considered' naa (emote . fall o! J ie Biblical apie? eee ay, (6 marks)

b) State six causes of sin from y. «) Wdentify ways in which Christian (7 marks)  
or in EgyPt strate his power in he hey were in the desert (8 marks)  
rshipped God when tt faster (5 marks)

2a) Name seven plagues that God used to de b) Identify eigh ) Give the similarities between the Jewish Passover an t ways in which the Israelites wo! id Christians i (7 marks)

3 a) Give seven ways in which Elijah succeeded as a Prophet of God. 5) Outline the conditions that made it difficult for Prophet Elijah to stop idolatry 1" Israel (7 marks)

c) Identify six ways in which Christians enhance the true worship of God today

(6 mark)

diay One y Par ofl Md ; . - 4a) Explain the | teachings of prophet Amos on Israel election. (7 marks)

b) State six ways in which God would punish Israel for her evils according to Amos. (6 marks)

Jessons Christians learn from Israel's election. (6 marks)

' " (Smks)

to handle cases of dishonesty. (8 marks)

(b) Outline what Angel Gabriel revealed about John the Baptist when he (7mks) birth to Zachariah (8mks)

2. (a) Explain the healing of the paralytic in Luke 5:18-26 7mks)

(b) List seven expectations of the Jews concerning the Messiah ( ° Ss

(6) In what ways are Christians preparing for th coming of the Messiah Gmks)

3: (0) Give six reasons that the Jewish leaders had to have Jesus arrested and even executed (6mks)

(b) State 8 extra-ordinary things that took place at the time of Jesus crucified/execution (8mks)

(c) State six problems that Christian today encounter while trying to practice their faith (6mks)

(b) Narrate peters message on the day of Pentecost (8mks)

(c) Give reasons why people abuse alcohol and other drugs today (Smks)

5. (a) State the role of the holy spirit as taught by Jesus (8mks)

(b) State Any Seven characteristics of Love (7mks)

(C) List any \$ gilts of the Holy Spirit (Smks)

6, (a) Explain the analogy of the People of God as used (0 express the unity of believers (7mks)

(b) What are the causes of disunity in the church today? (6mks)

(c) How is the unity believers expressed in the church today (7mks)

efine Constituti inswer All questions in this Section. 2. Identify ero pint Monarchy as a form of government. (1 mark)

A. Which is okccre ne where the remains of Kenyapitheeus were discovered in Kenya: (2 marks)

A. Stats two anette uence (mak rea me ities obtained from the Kenyan coast during the long distance trade, (2 marks)

2 Susceue iiae the government may limit one's freedom of movement in Kenya. (1 mark)

pee eS ae (2 marks)

Gent te et consent edn ye (1 mark)

Sts tro yes org eae exercised in Kenya. (2-marks)

40. Give aaa reaty which marked the colonial sphere of influence in East Africa in 1886. (1 mark)

|. Give two reasons why the British used indirect rule in some parts of Kens (2-marks)

Give two features of the political organizations which were formed in Kenya before 1939. (2 marks)

. Give one special court in Kenya. (1 mark)

| Beside unity, name the other pillar of Nyayoism. (1 mark)

\* |dentify two education commissions in Kenya since independence. (2:marks)

Outline one function of the speaker of the County Assembly

State two types of government expenditure in Kenya. (2 marks)

"Answer Any three questions in this Section. of the Luo from their original homeland into Kenya. (5 marks)

18. a) Give five reasons for the migration 'The Somali in Kenya during the pre-colonial period. (10 marks)

b) Describe the political organization of (3 marks)

19, a) State three factors which enabled the Arabs to sail from Oman to the Kenyan Coast. (12 marks)

b) Explain six effects of long distance trade on the people of Kenya 20. a)

State five terms of the Devonshire White Paper of 1923. (5 marks)

b) Explain five problems faced by Africans in Urban Centres during the colonial period. (10 marks)

21. a) Give five features of African Socialism in Kenya. (5 marks)

Industrialization in Kenya since independence. (10 marks)

b) Explain five factors that have influenced industrial

Answer Any Two questions from this section. A person should meet to qualify to be a citizen by birth in Kenya. (6 marks)

22. a) Give three conditions for a person (12 marks)

b) Explain six features of the Constitution of Kenya (2010)

23. a) Outline the composition of the County Executive Committee, (6 marks)

b) Describe the law making process at the National level in Kenya. (12 marks)

24, a) State five objectives of Devolution. b) Explain five ways in which the government of Kenya ensures effective utilization of public funds. (10 marks)

Examine the importance of data quality in risk analytics, discuss the potential impact of incomplete or incorrect data on risk prediction models, and propose strategies for mitigating these issues. (4 marks)

3. Analyze the 2 limitations of different machine learning algorithms (such as decision trees, neural networks, and support vector machines) in predicting credit default risk (4 marks)

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- (b) The price elasticity of demand  $-0.45$  in the long run. Why would the demand for crude oil be price in the short-run and (3 Marks)  
elastic in the long run than in the short run? Briefly explain.
- (c) Briefly explain why a supply shock leads to stagflation. (3 Marks)
- (d) In the context of financial markets, distinguish between informational efficiency. (4 Marks)
- (a) Suppose Kisumu can produce 120 million bushels of wheat if it uses all of its productive resources in the wheat industry, or 80 million yards of cloth if it uses all of its resources in the cloth industry. Use a diagram to illustrate your answers to the following questions. Label the diagram and explain in words.  
(Place wheat on the x-axis) {2 marks}
- (ii) Suppose Kisumu's consumers choose to consume 70 million bushels of wheat. How much cloth will Kisumu then be able to produce? {2 mark}
- (iii) What is the true price of a bushel of wheat in Kisumu? (2 marks)
- (iv) Can Kisumu produce 60 million bushels of wheat and 50 million yards of cloth?  
If so why? {2 marks}
- (b) If you buy 100 shares of East African Breweries stock  
(i) To what are you entitled? {3 marks}  
(ii) What is the most money you can make on this investment over the next year? {2 marks}  
(iii) If you paid KES180 per share, what is the most money you could lose over the year? {2 marks} [15 marks]
- ME. |» OlCa Ss ign eauite 6.19. P.O. siet e AR r. ANSWER ALL Got aaa (ene + a)  
Relate ¶| at re message of Peter on the Day of Pentecost. (10 Marks)
- b) In what al ways é 2 iid the coming of the Holy Spirit transform the life of Peter on the Day of ~~  
Pentecost? (5 Marks)
- c) What activities of the church in Kenya show that the Holy Spirit is working among them? (5 Marks)
- 2a) From the teachings of Jesus, what role would the Holy Spirit play? (8 Marks)
- b) Describe the fruits of the Holy Spirit according to Galatians 5:22-26. (6 Marks)
- c) In what ways do Christians demonstrate the fruit of generosity? (6 Marks)
- 3a) Explain how the unity of believers is expressed in the symbol of the body of Christ. (7 Marks)
- b) State teachings of Peter concerning the people of God. (1\* Peter 2:9- 10) (7 Marks)
- c) HBw do churches discipline those who cause disunity in the church today? (© Marks)
- a) According to Isaiah's prophecy state the names given to the Messiah, ic b)  
How did Jesus fulfill Isaiah's prophecy of the suffering servant eat ¶) How should Christians respond to those who are opposing them? (8 mks)
- a) Outline the role of John the Baptist. (7 mks)
- b) State the lessons that Christians learn from the annunciation of the birth of



John the

Baptist. (7:mks)

c) State the reasons: why Jesus was baptized yet he was sinless. (6 mks)

oy a) Narrate the transfiguration of Jesus. (8 mks)

b) List the occasions when Jesus was tempted. (6 mks)

¢) Outline the reasons why Christians should repent their sins. (6 mks)

4, S a) Describe the parable of the Sower. (8 mks)

b) Why did Jesus use parables in his teachings: (6 mks)

¢) Outline the lessons that Christians learn from the above parable. (6mks)

b) Describe the events that took place on the day of pentacost (7 mks)

¢) Describe how the unity of believers is expressed in the image of the vine and the branches.(John 15: 1-10) (7 mks)

a) Describe the call of Abraham. mks)

b) Explain the characteristics of a covenant. eras)

¢) Identify seven examples of covenants made in Kenya today (7m 3. a) Give five reasons why Israelites demanded for a king. (5 mks)

b) What lessons can modern political leaders learn from king David. (8 mks)

¢) How do Christians in Kenya demonstrate their faith in God? (7 mks)

4. a) State four differences between traditional African prophets and the Old Testament prophets. 5: (8 mks)

In what ways is the church in Kenya promoting justice in society? (6 mks)

Re, a) With reference to the teaching of prophet Jeremiah on judgement , State six ways in which God would punish the people of Judah. (6 mks)

b) In what ways did prophet Jeremiah suffer while carrying out his workin Judah. (6 mks)

c) List eight moral values that Christians can acquire from the life of prophet Jeremiah. (8 mks)

6. a) List eight places used for worship in Traditional African communities. (8 mks)

b) Give six reasons why sacrifices were made in Traditional African communities. (6 mks)

c) How do Christians in Kenya show respect for places of worship? (6 mks)

STRU IONS, : 1. State the Jewish expectation concerning the Messiah, (6mks)

b) Describe the events that were associated with the birth of John the Baptist, (Bmks)

©) Give reasons why the birth of a child is celebrated in modern sociely, (6mks)

2. a) Describe the transfiguration of Jesus ay recorded in Luke 9:28 - 37, " (4mks)

b) Outline the instructions that Jesus gave the twelve disciples when he commissioned them

Luke 9:51 -9, (7mks)

e reasons why disciples are called today. (Smks)

ify areas of conflicts between Jesus and the Jewish leaders which eventually led fo (6mks)

(were the reactions of the people who witnessed Jesus crucification, (7mks)

Significance of passion, death and resurrection of Jesus to Christians today. - the teaching of Jesus on the vine and braches, (7mks)

five ways in which the Holy spirit manifested himself on the day of Pentecost.

[are the reasons why some Christians live in Christianity today, (8mks)  
 (8mks)  
 causes of conflict between parents and children in the contemporary society?  
 @mks)  
 Government. (2marks)  
 Give one social activity that was practiced by a man during the New Stone Age  
 period, (1mark)  
 State two effects of the Land Enclosure System in Britain during the Agrarian  
 Revolution. . (2marks)  
 Highlight two negative effects of the trans-Saharan trade, (marks)  
 Name the first woman astronaut to travel into space. (1mark) 2  
 State two importance's of the radio as a form of communication. (2marks)  
 Give two ways how scientific inventions have negatively impacted on Agriculture.  
 (2marks)  
 What was the title given to the highest political and religious leader of the  
 Shona? (1mark)  
 Identify one chartered company that was used by the Europeans to acquire  
 colonies in  
 Africa. (1marks)  
 State one way how the Lochner treaty benefited King Lewanika individually.  
 (1mark)  
 - Outline one social factor that led to the rise of Nationalism in Africa.  
 (1marks)  
 2. State one military alliance that was formed by European nations before the  
 First World War. (1mark)  
 - Name two permanent member states of the United Nations Security Council.  
 (2marks)  
 State one way how the Cold War was witnessed in Africa. (1mark)  
 Name two military alliances which were formed during the cold war. (2marks)  
 . Outline two reasons why United States of America did not join the First  
 World War until 1917. (2marks)  
 Name the event that marked the end of Second World Wars. (1marks)  
 (a) Suppose that you have the following investment plans 1) You deposit KES10,  
 000 every end of the year for next 10 years  
 II) You deposit KES10, 000 at the beginning of every year for the next 10 years  
 Which plan would you go for and why given that the investment earns 7.5% semi-  
 annually? {7 marks}  
 (b) Table 3 shows the quantity and price of bread and butter produced in country  
 Z between 2009 and 2013. le 3: Price and quantity of bread and butter produced  
 in country z hat only bree here applicable):  
 GDP {2 m and 2013 {2 marks} marks} j [15 marks]  
 | how it differs from the Newton-Raphson (3 Marks)  
 7 le value of the root of the function  $f(x) =$   
 R code that you would use to solve this (6 Marks)  
 Me thematically) how you would generate  $f(0) = \exp - (0y)$ , and further numbers  
 from this distribution. / 7 (8 Marks)  
 Bi 80: million yards of cloth if it uses all of iagram to illustrate your  
 answers to the 1] 1 be ae to produce? ie mark} yet heat i in Kisumu? (2 es)

QUESTION ONE a. State and explain THREE indirect modes of transmission of communicable diseases [3Mks] \_ Highlight THREE levels of prevention of communicable diseases [3Mks]

(i) State FOUR importance of personal hygiene [4Mks]

(ii) State and explain any FIVE ways by which alcohol use raises the risk of cancer [6Mks] d. (i) State FOUR importance of personal hygiene x [4Mks]

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(a) State and explain any TEN factors that affect malaria transmission [10Mks]

(b) Describe any FIVE malaria prevention and control strategies [10Mks]

(a) Giving examples for each, classify the SEX known addictive drugs and their mode of intake [10Mks]

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QUESTION FOUR &

(a) Describe FIVE Goals of Antiretroviral therapy in HIV/AIDS treatments [10Mks]

(b) Discuss FIVE ways of positive living with HIV/AIDs [10Mks] lifestyle factors that contribute to many of such health problems? [10Mks]

QUESTION ONE (30 MARKS)-COMPULSORY a). Explain the following programming tools used in program development:- \. Language translators ii Unker ii. IDE iv. Loader (4 Marks)

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i. Feasibility study ii. System investigation ili, System design

Cc). Differentiate between pseudo code and a flowchart. (2 Marks)

(. Using a in a pseudo code and a flowchart, write a solution of a problem to calculate the area of a circle using the formula  $\text{area} = J) r^{\circ}$ , where  $J1=3.14$  and  $r$  is radius. (6 Marks)

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g). Outline any two benefits of structured programming. (2 Marks)

in the following principles used in programming: (4 Marks)

[in programming, giving an illustration using a flowchart for each. ia (6 Marks)

QUESTION 1 [30 MARKS] COMPULSORY a) Explain the two types of functions used in C program, giving an example of each. (4 Marks)

b) Write a program in C programming language that allows a user to input a whole number of X in main program and uses two user defined functions name, square() to compute the square of the number X and cube() to compute the cube of X, then veer the X, result of the square and cube in the main program. Use if() to select each subprogram at a time to execute. ; (10 Marks)

c) Explain the program structure of a C program, giving relevant examples using the program in Q1 (b). (5 Marks)

d) Differentiate between an array, a record, a pointer and a file, then write a C program that implements an array, a record and a file using a structure (record) consisting of itemname and itemcode to store data of 20 items in a retail shop computer and displays a list of the 20 items details reading from

file. Given that item name is a string of 25 characters, item code is a number of 4 digits, record name is item, logical file is itemfile, and physical file is "C:\item\itemf.dat'. (11 Marks)

QUESTION 2 [20 MARKS] a) Explain the three concepts used in structured programming. (9 Marks)

b) Write a C program that has three subprograms, first subprogram to input a list of 18 customers names as string and ; deposit as number with decimal point, second subprogram to compute sum of the deposit of all customers and third subprogram to display the list the 18 customers names and deposit, and sum of deposits. (11 Marks)

sed in structured programming. (9 Marks)

(0) , npute the area of acircle and to compute perimeter of a circle, (11. Marks)

"Paul" and "John" respectively, Explain the following (8 marks)  
; name, idumber, and course and then (8 Marks)

----- 201 questions, extracted from 346 lines -----

Using the Deep Learning (Keras + TF) model to predict, then printing the results

```
[ ]: text = []
all_questions = []

for line in refined.split('\n'):
    if not line.strip(): # Skip empty lines
        continue

    # Get the combined features as a dense array
    combined_features_dense = features_from_text_line(line).toarray()

    # Predict the label using the DL model
    prediction_proba = DLmodel.predict(combined_features_dense)
    prediction = (prediction_proba > 0.5).astype("int32")[0][0] # Convert probabilities to binary label

    # Get the probability of the positive class
    confidence = prediction_proba[0][0]

    # Append the result to the text list
    text.append({'text': line, 'label': prediction, 'confidence': confidence})

    # Add to all_questions if it's predicted as a question with high confidence
    if prediction == 1 and confidence > 0.5:
        all_questions.append(line)

# Convert list of dictionaries to DataFrame
df = pd.DataFrame(text)
```

```

# Save to CSV, excluding the index
df.to_csv('predictions/DLmodel.csv', index=False, columns=['text',
↳ 'label', 'confidence'])

# Output the results
print("\n-----OUTPUT-----")
for t in text:
    print(t)

print("\n-----EXTRACTED QUESTIONS-----")
for q in all_questions:
    print(q)

print("\n----- "+str(len(all_questions))+ " questions, extracted from
↳ "+str(len(text))+ " lines -----")

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-----OUTPUT-----

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diagram to illustrate the effect of a given shock on the equilibrium price and
quantity u in the specified competitive market. Explain whether there is a shift
in the demand curve, the supply, or neither i) An unexpected temporary heat wave
hits the South Coast. Show the effect in the ice cream market in Mombasa. (3
Marks)', 'label': 1, 'confidence': 0.70505065}
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producers. What is the effect in the ice cream market? (3 Marks)', 'label': 1,
'confidence': 0.7104222}
{'text': 'for crude oil in country H has been estimated to be -0.06', 'label':

```

0, 'confidence': 0.27982536}

{'text': '(b) The price elasticity of demand  $-0.45$  in the long run. Why would the demand for crude oil be price in the short-run and (3 Marks)', 'label': 1, 'confidence': 0.67756367}

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{'text': 'Examine the importance of data quality in risk analytics, discuss the potential impact of incomplete or incorrect data on risk prediction models, and propose strategies for mitigating these issues. (4 marks)', 'label': 0, 'confidence': 0.41294393}

{'text': '. Analyze the 2 limitations of different machine learning algorithms (such as decision trees, neural networks, and support vector machines) in predicting credit default risk (4 marks)', 'label': 1, 'confidence': 0.69231075}

{'text': 'Besides its involvement in stress testing, analyze three other ways that the risk committee is able to influence risk culture and capabilities in an organization. Provide examples of recent corporate governance scenarios where the risk committee has played a pivotal role in fostering an effective risk culture. (6 Marks)', 'label': 0, 'confidence': 0.4322148}

{'text': 'Critically assess the benefits and criticisms of regulatory frameworks for banks and insurance companies. Use contemporary examples to illustrate your points and focus on the effects of recent changes in regulatory expectations, such as the increased focus on individual accountability and documentation. (8 marks)', 'label': 0, 'confidence': 0.4107308}

{ 'text': '"Risk identification forms the foundation of comprehensive risk management. Given the evolution of risks in the modern global context, including technological, environmental, and geopolitical risks, traditional risk identification methods may need to be supplemented or rethought."', 'label': 1, 'confidence': 0.53212523}

{ 'text': 'Page 1 of 4 (7 marks)', 'label': 0, 'confidence': 0.24324489}

{ 'text': '© 4-1) Identify seven reasons why man is consider' naa (emote . fall o! J ie Biblical apie? eee ay, (6 marks)', 'label': 1, 'confidence': 0.547918}

{ 'text': 'b) State six causes of sin from y. «) Wdentify ways in which Christian (7 marks)', 'label': 1, 'confidence': 0.61443615}

{ 'text': 'or in EgyPt strate his power in he hey were in the desert (8 marks)', 'label': 0, 'confidence': 0.4548751}

{ 'text': 'rshipped God when tt faster (5 marks)', 'label': 1, 'confidence': 0.53819376}

{ 'text': '2a) Name seven plagues that God used to de b) Identify eigh ) Give the similarities between the Jewish Passover an t ways in which the Israelites wo! id Christians i (7 marks)', 'label': 1, 'confidence': 0.60215116}

{ 'text': '3 a) Give.seven ways in which Elijah succeeded as a Prophet of God. 5) Outline the conditions that made it difficult for Prophet Elijah to stop idolatry 1" Israel (7 marks)', 'label': 1, 'confidence': 0.58493036}

{ 'text': 'c) Identify six ways in which Christians enhance the true worship of God today (6 mark)', 'label': 1, 'confidence': 0.55852675}

{ 'text': 'diay One y Par ofl Md ; . - 4a) Explain the | teachings of prophet Amos on Israel election. (7 marks)', 'label': 1, 'confidence': 0.5829693}

{ 'text': 'b) State six ways in which God would punish Israel for her evils according to Amos. (6 marks)', 'label': 1, 'confidence': 0.61704284}

{ 'text': 'Jessions Christians learn from Israel's election. (6 marks)', 'label': 0, 'confidence': 0.34210533}

{ 'text': ' ' " (Smks)', 'label': 0, 'confidence': 0.38680837}

{ 'text': '(7 marks)', 'label': 0, 'confidence': 0.34867522}

{ 'text': 'to handle cases of dishonesty. (8 marks)', 'label': 0, 'confidence': 0.41169125}

{ 'text': '-', 'label': 0, 'confidence': 0.3293627}

{ 'text': 'Gat Gof veuy : aes ssf ? © marks)', 'label': 0, 'confidence': 0.26811725}

{ 'text': 'Geittns (Smks)', 'label': 0, 'confidence': 0.29340816}

{ 'text': '(©) Give five reasons why Christians go to church of announced his', 'label': 1, 'confidence': 0.62108326}

{ 'text': '(b) Outline what Angel Gabriel revealed about John the Baptist when he (7mks)', 'label': 1, 'confidence': 0.68716884}

{ 'text': 'birth to Zachariah (8mks)', 'label': 0, 'confidence': 0.3949706}

{ 'text': '2. (a) Explain the healing of the paralytic in Luke 5:18-26 7mks)', 'label': 1, 'confidence': 0.68550557}

{ 'text': '(b) List seven expectations of the Jews concerning the Messiah ( ° Ss', 'label': 1, 'confidence': 0.5119132}

{ 'text': '(6) In what ways are Christians preparing for th coming of the Messiah Gmks)', 'label': 1, 'confidence': 0.53464806}

{ 'text': '3: (©) Give six reasons that the Jewish leaders had to have Jesus

arrested and even executed (6mks)', 'label': 1, 'confidence': 0.568298}

{'text': '(b) State 8 extra-ordinary things that took place at the time of Jesus crucified/execution (8mks)', 'label': 1, 'confidence': 0.5747419}

{'text': '(c) State six problems that Christian today encounter while trying to practice their faith (6mks)', 'label': 1, 'confidence': 0.58399475}

{'text': '(b) Narrate peters message on the day of Pentecost (8mks)', 'label': 1, 'confidence': 0.5336956}

{'text': '(c) Give reasons why people abuse alcohol and other drugs today (Smks)', 'label': 1, 'confidence': 0.7528524}

{'text': '5. (a) State the role of the holy spirit as taught by Jesus (8mks)', 'label': 1, 'confidence': 0.59004176}

{'text': '(b) State Any Seven characteristics of Love (7mks)', 'label': 1, 'confidence': 0.56751746}

{'text': '(C) List any 5 gifts of the Holy Spirit (Smks)', 'label': 1, 'confidence': 0.5668987}

{'text': '6, (a) Explain the analogy of the People of God as used (0 express the unity of believers (7mks)', 'label': 1, 'confidence': 0.5890908}

{'text': '(b) What are the causes of disunity in the church today? (6mks)', 'label': 1, 'confidence': 0.7567843}

{'text': 'm)', 'label': 0, 'confidence': 0.32490793}

{'text': '(c) How is the unity believers expressed in the church today (7mks)', 'label': 1, 'confidence': 0.7562213}

{'text': 'mks)', 'label': 0, 'confidence': 0.3288123}

{'text': 't', 'label': 0, 'confidence': 0.32490793}

{'text': 'HYeqjeme AH Abell. | \\\', 'label': 0, 'confidence': 0.22824483}

{'text': 'A/ Be ee (25 MARKS)', 'label': 0, 'confidence': 0.21673301}

{'text': 'efine Constituti inswer All questions in this Section. 2. Identify ero pint Monarchy as a form of government. (1 mark)', 'label': 0, 'confidence': 0.35231277}

{'text': 'A. Which is okccre ne where the remains of Kenyapitheus were discovered in Kenya: (2 marks)', 'label': 0, 'confidence': 0.37947553}

{'text': 'A. Stats two anette uence (mak rea me ities obtained from the Kenyan coast during the long distance trade, (2 marks)', 'label': 0, 'confidence': 0.30648643}

{'text': '2 Susceue iiae the government may limit one's freedom of movement in Kenya. (1 mark)', 'label': 0, 'confidence': 0.4745173}

{'text': 'pee eS ae (2 marks)', 'label': 0, 'confidence': 0.38992485}

{'text': 'Gent te et consent edn ye (1 mark)', 'label': 0, 'confidence': 0.23736021}

{'text': 'Sts tro yes org eae exercised in Kenya. (2-marks)', 'label': 0, 'confidence': 0.2988594}

{'text': '40. Give aaa reaty which marked the colonial sphere of influence in East Africa in 1886. (1 mark)', 'label': 1, 'confidence': 0.72183615}

{'text': '|. Give two reasons why the British used indirect rule in some parts of Kens (2-marks)', 'label': 1, 'confidence': 0.6880984}

{'text': '¥il Adonis} one estou way aries werent allowed to wow cnsu crops m Kenge lore 1224-0 te)', 'label': 0, 'confidence': 0.34917477}

{'text': 'Give two features of the political organizations which were formed in

Kenya before 1939. (2 marks)', 'label': 1, 'confidence': 0.55600953}

{'text': '. Give one special court in Kenya. (1 mark)', 'label': 1, 'confidence': 0.5425069}

{'text': '| Beside unity, name the other pillar of Nyayoism. (1 mark)', 'label': 0, 'confidence': 0.36142743}

{'text': '\* Identify two education commissions in Kenya since independence. (2:marks)', 'label': 0, 'confidence': 0.42617804}

{'text': '(1 mark)', 'label': 0, 'confidence': 0.32986292}

{'text': 'Outline one function of the speaker of the County Assembly', 'label': 0, 'confidence': 0.26701033}

{'text': 'State two types of government expenditure in Kenya. (@ marks)', 'label': 0, 'confidence': 0.29300272}

{'text': 'SECTION B: (45 MARKS)', 'label': 0, 'confidence': 0.21978082}

{'text': '"Answer Any three questions in this Section. ofthe Luo from their original homeland into Kenya. (5 marks)', 'label': 0, 'confidence': 0.39540112}

{'text': '18. a) Give five reasons for the migration Tthe Somali in Kenya during the pre-colonial period. (10 marks)', 'label': 1, 'confidence': 0.67991084}

{'text': 'b) Describe the political organization o (3 marks)', 'label': 1, 'confidence': 0.77784795}

{'text': '19, a) State three factors which enabled the Arabs 10 sail from Oman to the Kenyan Coast. (12 marks)', 'label': 0, 'confidence': 0.47436818}

{'text': 'b) Explain six effects of long distance trade on the people of Kenya 20. a) State five terms of the Devonshire White Paper of 1923. (5 marks)', 'label': 1, 'confidence': 0.78989893}

{'text': 'b) Explain five problems faced by Africans in Urban Centres during the colonial period. (10 marks)', 'label': 1, 'confidence': 0.7887944}

{'text': '21. a) Give five features of African Socialism in Kenya. (5 marks)', 'label': 1, 'confidence': 0.65720326}

{'text': 'lization in Kenya since independence. (10marks)', 'label': 0, 'confidence': 0.42189023}

{'text': ') Explain five factors that have influenced industrial', 'label': 1, 'confidence': 0.588081}

{'text': 'Answer Any Two questions from this section. erson should meet to qualify to be a citizen by birth in Kenya. G marks)', 'label': 0, 'confidence': 0.2893803}

{'text': '22. a) Give three conditions a ps (12 marks)', 'label': 1, 'confidence': 0.650368}

{'text': ') Explain six features ofthe Constitution of Kenya (2010)', 'label': 1, 'confidence': 0.63493484}

{'text': '23. a) Outline the composition of the County Executive Committee, G marks)', 'label': 1, 'confidence': 0.57259464}

{'text': ') Describe the law making process atthe National level in Kenya. (12 marks)', 'label': 1, 'confidence': 0.67272234}

{'text': '(5 marks)', 'label': 0, 'confidence': 0.34867522}

{'text': '24, a) State five objectives of Devolution. b) Explain five ways in which the government of Kenya ensures effective utilization of public funds. (10 marks)', 'label': 1, 'confidence': 0.6072836}



{'text': 'io Maseno School Mock Committee 2023 co :', 'label': 0, 'confidence': 0.28403604}

{'text': 'Strathmore', 'label': 0, 'confidence': 0.18778877}

{'text': 'UNIVERSITY', 'label': 0, 'confidence': 0.19651201}

{'text': 'STRATHMORE INSTITUTE OF MATHEMATICAL SCIENCES', 'label': 0, 'confidence': 0.17387857}

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{'text': 'END OF SEMESTER EXAMINATION', 'label': 0, 'confidence': 0.19385734}

{'text': 'DSA 8304 Risk Management Analytics', 'label': 0, 'confidence': 0.20134202}

{'text': 'Time: 2.5 Hours', 'label': 0, 'confidence': 0.196487}

{'text': 'DATE: 17" July 2022', 'label': 0, 'confidence': 0.21347652}

{'text': 'Instructions &', 'label': 0, 'confidence': 0.20706604}

{'text': 'Dy', 'label': 0, 'confidence': 0.21164422}

{'text': 'This examination consists of FIVE questions.', 'label': 0, 'confidence': 0.18857716}

{'text': 'Answer Question ONE (COMPULSORY) and any other TWO questions.', 'label': 0, 'confidence': 0.18761405}

{'text': 'Question 1 (30 Marks)', 'label': 0, 'confidence': 0.22990966}

{'text': '1p', 'label': 0, 'confidence': 0.29274046}

{'text': 'Examine the importance of data quality in risk analytics, discuss the potential impact of incomplete or incorrect data on risk prediction models, and propose strategies for mitigating these issues. (4 marks)', 'label': 0, 'confidence': 0.41294393}

{'text': '. Analyze the 2 limitations of different machine learning algorithms (such as decision trees, neural networks, and support vector machines) in predicting credit default risk (4 marks)', 'label': 1, 'confidence': 0.69231075}

{'text': 'Besides its involvement in stress testing, analyze three other ways that the risk committee is able to influence risk culture and capabilities in an organization. Provide examples of recent corporate governance scenarios where the risk committee has played a pivotal role in fostering an effective risk culture. (6 Marks)', 'label': 0, 'confidence': 0.4322148}

{'text': 'Critically assess the benefits and criticisms of regulatory frameworks for banks and insurance companies. Use contemporary examples to illustrate your points and focus on the effects of recent changes in regulatory expectations, such as the increased focus on individual accountability and documentation. (8 marks)', 'label': 0, 'confidence': 0.4107308}

{'text': '"Risk identification forms the foundation of comprehensive risk management. Given the evolution of risks in the modern global context, including technological, environmental, and geopolitical risks, traditional risk identification methods may need to be supplemented or rethought."', 'label': 1, 'confidence': 0.53212523}

{'text': 'Page 1 of 4', 'label': 0, 'confidence': 0.20403498}

{'text': 'DSA 8105: FUNDAMENTAL CONCEPTS IN a', 'label': 0, 'confidence': 0.19755962}

{'text': 'DATE: 6% September 2021', 'label': 0, 'confidence': 0.2118011}

{'text': 'Instructions', 'label': 0, 'confidence': 0.20706604}

{'text': 'Ibs This examination consists of FIVE questions. 2s Answer Question ONE (COMPULSORY) and any other Two ques e', 'label': 0, 'confidence': 0.17927632}

{'text': 'QUESTION ONE (20 MARKS)', 'label': 0, 'confidence': 0.21323642}

{'text': '(a) For each of the following scenarios, use a supply and demand diagram to illustrate the effect of a given shock on the equilibrium price and quantity u in the specified competitive market. Explain whether there is a shift in the demand curve, the supply, or neither i) An unexpected temporary heat wave hits the South Coast. Show the effect in the ice cream market in Mombasa. (3 Marks)', 'label': 1, 'confidence': 0.70505065}

{'text': 'ii) The government introduces a tax on ice cream which is paid by producers. What is the effect in the ice cream market? (3 Marks)', 'label': 1, 'confidence': 0.7104222}

{'text': 'for crude oil in country H has been estimated to be -0.06', 'label': 0, 'confidence': 0.27982536}

{'text': '(b) The price elasticity of demand \_0.45 in the long run. Why would the demand for crude oil be price in the short-run and (3 Marks)', 'label': 1, 'confidence': 0.67756367}

{'text': 'elastic in the long run than in the short run? Briefly explain.', 'label': 0, 'confidence': 0.48942563}

{'text': '(c) Briefly explain why a supply shock leads to stagflation. (3 Marks)', 'label': 1, 'confidence': 0.6818709}

{'text': 'n economic efficiency and', 'label': 0, 'confidence': 0.2876301}

{'text': '(d) In the context of financial markets, distinguish between informational efficiency. (4 Marks)', 'label': 1, 'confidence': 0.57501423}

{'text': 'Page 1 of 3', 'label': 0, 'confidence': 0.20403498}

{'text': 'STRATHMORE UNIVERSITY', 'label': 0, 'confidence': 0.1761997}

{'text': 'STRATHMORE INSTITUTE OF MATHEMATICAL SCIENCES', 'label': 0, 'confidence': 0.17387857}

{'text': 'MASTER OF SCIENCE IN DATA SCIENCE AND ANALYTICS', 'label': 0, 'confidence': 0.19809519}

{'text': 'END OF SEMESTER EXAMINATION', 'label': 0, 'confidence': 0.19385734}

{'text': 'DSA 8105: FUNDAMENTAL CONCEPTS IN FINANCE AND ECONOMICS', 'label': 0, 'confidence': 0.21111001}

{'text': 'Date: 4° October, 2022 Time: 3 hours', 'label': 0, 'confidence': 0.19537756}

{'text': 'Instructions', 'label': 0, 'confidence': 0.20706604}

{'text': 'Attempt any Four (4) questions', 'label': 0, 'confidence': 0.21076585}

{'text': 'Question 1', 'label': 0, 'confidence': 0.19790144}

{'text': '(a) Suppose Kisumu can produce 120 million bushels of wheat if it uses all of its pro- ductive resources in the wheat industry, or 80 million yards of cloth if it uses all of its resources in the cloth industry. Use a diagram to illustrate your answers to the following questions. Label the diagram and explain in words.', 'label': 1, 'confidence': 0.6577396}

{'text': '(i) Assuming constant opportunity costs, draw Kisumus production- possibility curve.', 'label': 0, 'confidence': 0.4557451}

{'text': '(Place wheat on the x-axis) {2 marks}', 'label': 0, 'confidence': 0.42058632}

{'text': '(ii) Suppose Kisumu's consumers choose to consume 70 million bushels of wheat.', 'label': 1, 'confidence': 0.5443714}

{'text': 'How much cloth will Kisumu then be able to produce? {2 mark}', 'label': 0, 'confidence': 0.4585994}

{'text': '(iii) What is the true price of a bushel of wheat in Kisumu? (2 marks)', 'label': 1, 'confidence': 0.7681327}

{'text': '(iv) Can Kisumu produce 60 million bushels of wheat and 50 million yards of cloth?', 'label': 1, 'confidence': 0.5422575}

{'text': 'If so why? {2 marks}', 'label': 0, 'confidence': 0.38385195}

{'text': '(b) If you buy 100 shares of East African Breweries stock', 'label': 1, 'confidence': 0.5312498}

{'text': '(i) To what are you entitled? {3 marks}', 'label': 1, 'confidence': 0.6514821}

{'text': '(ii) What is the most money you can make on this investment over the next year? {2 marks}', 'label': 1, 'confidence': 0.7643724}

{'text': '(iii) If you paid KES180 per share, what is the most money you could lose over the year? {2 marks} [15 marks]', 'label': 1, 'confidence': 0.67226756}

{'text': 'OLOOL dj MID AEPES SEC SCHOOL [7 sil FORN: mane EXAM 2024 loLoontes ey Vc 5 i 3 TER PES seco,', 'label': 0, 'confidence': 0.20122534}

{'text': 'ME. |» OlCa Ss ign eauite 6.19. P.O. siete AR r. ANSWER ALL Got aaa (ene + a) Relate ¢| at re message of Peter on the Day of Pentecost. (10 Marks)', 'label': 0, 'confidence': 0.30670783}

{'text': 'b) In what al ways é 2 iid the coming of the Holy Spirit transform the life of Peter on the Day of ~', 'label': 1, 'confidence': 0.64319}

{'text': 'Pentecost? (5 Marks)', 'label': 0, 'confidence': 0.2979009}

{'text': 'c) What activities of the church in Kenya show that the Holy Spirit is working among them? (5 Marks)', 'label': 1, 'confidence': 0.7872008}

{'text': '2a) From the teachings of Jesus, what role would the Holy Spirit play? (8 Marks)', 'label': 1, 'confidence': 0.57529193}

{'text': 'b) Describe the fruits of the Holy Spirit according to Galatians 5:22-26. (6 Marks)', 'label': 1, 'confidence': 0.7981252}

{'text': 'c) In what ways do Christians demonstrate the fruit of generosity? (6 Marks)', 'label': 1, 'confidence': 0.70576143}

{'text': '3a) Explain how the unity of believers is expressed in the symbol of the body of Christ. (7 Marks)', 'label': 1, 'confidence': 0.6568907}

{'text': 'b) State teachings of Peter concerning the people of God. (1\* Peter 2:9- 10) (7 Marks)', 'label': 1, 'confidence': 0.6142459}

{'text': 'c) HBw do churches discipline those who cause disunity in the church today? (© Marks)', 'label': 1, 'confidence': 0.69000024}

{'text': 'a) According to Isaiah's prophecy state the names given to the Messiah, ic b) How did Jesus fultill Isaiah's prophecy of the suffering servant eat ¢) How should Christians respond to those who are opposing them? (8 mks)', 'label': 1, 'confidence': 0.6987789}

{'text': 'a) Outline the role of John the Baptist. (7 mks)', 'label': 1, 'confidence': 0.63545555}

{'text': 'b) State the lessons that Christians learn from the annunciation of the birth of John the', 'label': 1, 'confidence': 0.59912825}

{'text': 'Baptist. (7:mks)', 'label': 0, 'confidence': 0.28996414}

{'text': 'c) State the reasons: why Jesus was baptized yet he was sinless. (6 mks)', 'label': 1, 'confidence': 0.6880635}

{'text': 'oy a) Narrate the transfiguration of Jesus. (8 mks)', 'label': 0, 'confidence': 0.4407046}

{'text': 'b) List the occasions when Jesus was tempted. (6 mks)', 'label': 1, 'confidence': 0.66112775}

{'text': 'ϕ) Outline the reasons why Christians should repent their sins. (6 mks)', 'label': 1, 'confidence': 0.5699095}

{'text': '4, S a) Describe the parable of the Sower. (8 mks)', 'label': 1, 'confidence': 0.539558}

{'text': 'b) Why did Jesus use parables in his teachings: (6 mks)', 'label': 1, 'confidence': 0.7888801}

{'text': 'ϕ) Outline the lessons that Christians learn from the above parable. (6mks)', 'label': 0, 'confidence': 0.47247222}

{'text': 'S . a) List the fruits of the Holy Spirit as taught by St. Paul (7 mks)', 'label': 0, 'confidence': 0.31872594}

{'text': 'b) Describe the events that took place on the day of pentacost (7 mks)', 'label': 1, 'confidence': 0.7821129}

{'text': 'ϕ) Describe how the unity of believers is expressed in the image of the vine and the branches.(John 15: 1-10) (7 mks)', 'label': 1, 'confidence': 0.691296}

{'text': '+ sistand2 (6mks)', 'label': 0, 'confidence': 0.3516343}

{'text': 'ae y ne' lical stories of creation it in Biblical creation ies given to human beings by (a mks)', 'label': 1, 'confidence': 0.5032124}

{'text': 'F 6 mks)', 'label': 0, 'confidence': 0.2359934}

{'text': 'Kenya take care of the environment ( (8 mks)', 'label': 0, 'confidence': 0.27832988}

{'text': 'a) Describe the call of Abraham. mks)', 'label': 1, 'confidence': 0.78087854}

{'text': 'b) Explain the characteristics of a covenant. eras)', 'label': 1, 'confidence': 0.7372783}

{'text': 'ϕ) Identify seven examples of covenants made in Kenya today (7m 3. a) Give five reasons why Israelites demanded for a king. (5 mks)', 'label': 1, 'confidence': 0.57886726}

{'text': 'b) What lessons can modern political leaders learn from king David. (8 mks)', 'label': 1, 'confidence': 0.7810368}

{'text': 'ϕ) How do Christians in Kenya demonstrate their faith in God? (7 mks)', 'label': 1, 'confidence': 0.67232794}

{'text': '4. a) State four differences between traditional African prophets and the Old Testament prophets. 5: (8 mks)', 'label': 1, 'confidence': 0.58764535}

{'text': '(6 mks)', 'label': 0, 'confidence': 0.33042368}

{'text': 'b) Outline the social injustices condemned by prophet Amos in Israel.', 'label': 1, 'confidence': 0.53157073}

{'text': 'In what ways is the church in Kenya promoting justice in society? (6 mks)', 'label': 1, 'confidence': 0.5186569}

{'text': 'c)', 'label': 0, 'confidence': 0.32490793}

{'text': 'Re, a) With reference to the teaching of prophet Jeremiah on judgement , State six ways in which God would punish the people of Judah. (6 mks)',

'label': 0, 'confidence': 0.320084}

{'text': 'b) In what ways did prophet Jeremiah suffer while carrying out his work in Judah. (6 mks)', 'label': 1, 'confidence': 0.71406686}

{'text': 'c) List eight moral values that Christians can acquire from the life of prophet Jeremiah. (8 mks)', 'label': 1, 'confidence': 0.6258043}

{'text': '6. a) List eight places used for worship in Traditional African communities. (8 mks)', 'label': 1, 'confidence': 0.584675}

{'text': 'b) Give six reasons why sacrifices were made in Traditional African communities. (6 mks)', 'label': 1, 'confidence': 0.79866713}

{'text': 'c) How do Christians in Kenya show respect for places of worship? (6 mks)', 'label': 1, 'confidence': 0.78007793}

{'text': ', PO, Hoa B47 UZ06,', 'label': 0, 'confidence': 0.30470484}

{'text': 'OLOOLTEPES SECON . KIBERIAD -', 'label': 0, 'confidence': 0.21070498}

{'text': 'DARY SCHOOL, \\. ', 'label': 0, 'confidence': 0.20377487}

{'text': 'CRE. FORM 4 dias', 'label': 0, 'confidence': 0.22272193}

{'text': 'TERM 1, MID TERM EXAM', 'label': 0, 'confidence': 0.21929578}

{'text': 'Paper 2,', 'label': 0, 'confidence': 0.23563395}

{'text': 'NAME pei AMIE NMED Eliseo srssresite ADM NOW ARS iovevsvesere', 'label': 0, 'confidence': 0.22532612}

{'text': 'STRU IONS, : 1. State the Jewish expectation concerning the Messiah, (6mks)', 'label': 0, 'confidence': 0.31611714}

{'text': 'b) Describe the events that were associated with the birth of John the Baptist, (Bmks)', 'label': 1, 'confidence': 0.8112257}

{'text': '©) Give reasons why the birth of a child is celebrated in modern society, (6mks)', 'label': 1, 'confidence': 0.6601365}

{'text': '2. a) Describe the transfiguration of Jesus as recorded in Luke 9:28 - 37, " (4mks)', 'label': 1, 'confidence': 0.6892369}

{'text': 'b) Outline the instructions that Jesus gave the twelve disciples when he commissioned them', 'label': 1, 'confidence': 0.66425866}

{'text': 'Luke 9:51 - 9, (7mks)', 'label': 0, 'confidence': 0.31944773}

{'text': 'e reasons why disciples are called today. (Smks)', 'label': 1, 'confidence': 0.5513546}

{'text': 'if areas of conflicts between Jesus and the Jewish leaders which eventually led to (6mks)', 'label': 0, 'confidence': 0.4377056}

{'text': '(were the reactions of the people who witnessed Jesus crucifixion, (7mks)', 'label': 0, 'confidence': 0.4612941}

{'text': 'Significance of passion, death and resurrection of Jesus to Christians today. - the teaching of Jesus on the vine and branches, (7mks)', 'label': 0, 'confidence': 0.33664873}

{'text': 'five ways in which the Holy spirit manifested himself on the day of Pentecost. [are the reasons why some Christians live in Christianity today, (8mks)', 'label': 1, 'confidence': 0.57164663}

{'text': '(8mks)', 'label': 0, 'confidence': 0.38570392}

{'text': '(6mks)', 'label': 0, 'confidence': 0.37047988}

{'text': 'causes of conflict between parents and children in the contemporary society? (6mks)', 'label': 0, 'confidence': 0.38836363}

{'text': '(6mks)', 'label': 0, 'confidence': 0.37047988}

{'text': '(6mks)', 'label': 0, 'confidence': 0.37047988}

{'text': 'ST, MARKS KISERIAN MI 3a', 'label': 0, 'confidence': 0.2185704}

{'text': 'TERM 1 2024', 'label': 0, 'confidence': 0.2271879}

{'text': 'SECTION S4 (25MK 1 17,', 'label': 0, 'confidence': 0.23159365}

{'text': 'XED DAY SECONDARY SCHOOL', 'label': 0, 'confidence': 0.19010842}

{'text': 'NDNA Teun NANG aaa po aey EN c', 'label': 0, 'confidence': 0.22341752}

{'text': 'Min: -TERMEN ERNMENT PAPER 2 iby Me "wc 'Gentity any two  
classifications of written sources of information on History and', 'label': 0,  
'confidence': 0.20986967}

{'text': 'Government. (2marks)', 'label': 0, 'confidence': 0.31120223}

{'text': 'Give one social activ ity that was practiced by e man during the New  
Stone Age period, (Imark)', 'label': 0, 'confidence': 0.46151063}

{'text': 'State two effects of the Land Enclosure System in Britain during the  
Agrarian', 'label': 0, 'confidence': 0.25975317}

{'text': 'Revolution. . (2marks)', 'label': 0, 'confidence': 0.30167058}

{'text': 'Highlight two negative effects of the trans-Saharan trade, (marks)',  
'label': 0, 'confidence': 0.30249694}

{'text': 'Name the first woman astronaut to travel into space. (Imark) 2',  
'label': 0, 'confidence': 0.24391258}

{'text': 'State two importance's of the radio as a form of communication.  
(2marks)', 'label': 0, 'confidence': 0.33352268}

{'text': 'Give two ways how scientific inventions have negatively impacted on  
Agriculture. (2marks)', 'label': 0, 'confidence': 0.49598697}

{'text': 'What was the title given to the highest political and religious leader  
of the Shona? (Imark)', 'label': 0, 'confidence': 0.41459033}

{'text': 'Identify one chartered company that was used by the Europeans to  
acquire colonies in', 'label': 0, 'confidence': 0.25814405}

{'text': 'Africa. (Imarks)', 'label': 0, 'confidence': 0.30567443}

{'text': 'State one way how the Lochner treaty benefited King Lewanika  
individually. (1mark)', 'label': 0, 'confidence': 0.34253025}

{'text': '- Outline one social factor that led to the rise of Nationalism in  
Africa. (imarks)', 'label': 0, 'confidence': 0.43955073}

{'text': '2. State one military alliance that was formed by European nations  
before the First World War. (Imark)', 'label': 1, 'confidence': 0.5141373}

{'text': '- Name two permanent member states of the United Nations Security  
Council. (2marks)', 'label': 0, 'confidence': 0.39782414}

{'text': 'State one way how the Cold War was witnessed in Africa. (Imark)',  
'label': 0, 'confidence': 0.31268835}

{'text': 'Name two military alliances which were formed during the cold war.  
(2marks)', 'label': 0, 'confidence': 0.31915295}

{'text': '. Outline two reasons w hy U nited States of America did not join the  
First World War until 1917. (2marks)', 'label': 0, 'confidence': 0.4520709}

{'text': 'Name Ibe event pthay marked the end of Second World Wars. (Imarks)',  
'label': 0, 'confidence': 0.3091465}

{'text': 'Question 5', 'label': 0, 'confidence': 0.19790144}

{'text': '(a) Suppose that you have the following investment plans 1) You  
deposit KES10, 000 every end of the year for next 10 years', 'label': 1,  
'confidence': 0.55948186}

{'text': 'II) You deposit KES10, 000 at the beginning of every year for the next

10 years', 'label': 0, 'confidence': 0.26819032}

{'text': 'Which plan would you go for and why given that the investment earns 7.5% semi- annually? {7 marks}', 'label': 0, 'confidence': 0.4053032}

{'text': '(b) Table 3 shows the quantity and price of bread and butter produced in country Z between 2009 and 2013. le 3: Price and quantity of bread and butter produced in country z hat onlv bree here applicable):', 'label': 1, 'confidence': 0.58300275}

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{'text': 'TIME: 2 Hours 2021 a', 'label': 0, 'confidence': 0.19104226}

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{'text': 'MASTER OF SCIENCE IN DATA SCIENCE AND ANALYTICS', 'label': 0, 'confidence': 0.19809519}

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{'text': 'Question [.', 'label': 0, 'confidence': 0.19790144}

{'text': 'Bis peptic Rb "examine the incomplete or inc ts involvement in st ress" afluence risk culture and capabilities in an organization. Provide examples of recent yernance scenarios where the risk committee has played a pivotal role in 0 bn ong! aren se < CeCctlve rs! k culture. temporary € hee', 'label': 0, 'confidence': 0.3043007}

{'text': 'Lacy gues poser cay te sulatory expectatic', 'label': 0, 'confidence': 0.22853483}

{'text': 'Ha honeny hee | mentation. (6 Ma»'k ne', 'label': 0, 'confidence': 0.22579171}

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Time: 3 Hours ice cream market in Mombasa. _ G Marks)', 'label': 0,
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{'text': '| how it differs from the Newton-Raphson (3 Marks)', 'label': 1,
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{'text': 'R code that you would use to solve this (6 Marks)', 'label': 0,
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{'text': 'Me thematically) how you would generate f£0) = @exp - (0y), and
further numbers from this distribution. / 7 (8 Marks)', 'label': 0,
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{'text': 'ye', 'label': 0, 'confidence': 0.3116018}
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{'text': 'October, 2022 Time: 3 hours ----- / any', 'label': 0, 'confidence':
0.20038347}
{'text': 'Bi 80: million yards of cloth if it uses all of iagram to illustrate
your answers to the 1] 1 be ae to produce? ie mark} yet heat i in Kisumu? (2
eS)', 'label': 0, 'confidence': 0.28099334}
{'text': '[15 marks]', 'label': 0, 'confidence': 0.35776424}
{'text': 'SECTION A: Attempt ALL questions in this section', 'label': 0,
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{'text': 'QUESTION ONE a. State and explain THREE indirect modes of transmission
of communicable diseases [3Mks] _ Highlight THREE levels of prevention of
communicable diseases [3Mks]', 'label': 0, 'confidence': 0.40384105}
{'text': '(i) State FOUR importance of personal hygiene [4Mks]', 'label': 1,
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{'text': '(ii) State and explain any FIVE ways by which alcohol use raises the
risk of cancer [6Mks] d. (i) State FOUR importance of personal hygiene x
[4Mks]', 'label': 1, 'confidence': 0.71210176}
{'text': '(ii) State and explain any FIVE methods of Prevention and Control of
HIV/AIDs [10Mks]', 'label': 1, 'confidence': 0.69780874}
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```



'confidence': 0.20500566}

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{'text': '(b) Describe any FIVE malaria prevention and control strategies [10Mks]', 'label': 1, 'confidence': 0.7692719}

{'text': 'QUESTiICN THREE', 'label': 0, 'confidence': 0.23100697}

{'text': '(a) Giving examples for each, classify the SEX known addictive drugs and their mode of intake [10Mks]', 'label': 1, 'confidence': 0.5967197}

{'text': '(b) State and eexplain FIVE ways by which alcohol decreases resistance to HIV', 'label': 1, 'confidence': 0.6299669}

{'text': 'Infection [10Mks]', 'label': 0, 'confidence': 0.29214284}

{'text': 'QUESTION FOUR £', 'label': 0, 'confidence': 0.23047419}

{'text': '(a) Describe FIVE Goals of Antiretroviral therapy in HIV/AIDS treatments [10Mks]', 'label': 1, 'confidence': 0.7771003}

{'text': '(b) Discuss FIVE ways of positive living with HIV/AIDs [10Mks] lifestyle factors that contribute to many of such health problems? [10Mks]', 'label': 1, 'confidence': 0.78543806}

{'text': 'Yo of deaths from lifestyle diseases occur in low- and middle-', 'label': 0, 'confidence': 0.23529398}

{'text': 'Sion By ain this scenario using five reasons? [10Mks]', 'label': 0, 'confidence': 0.28462675}

{'text': 'QUESTION ONE (30 MARKS)-COMPULSORY a). Explain the following programming tools used in program development:- \\. Language translators ii Unker ii. IDE iv. Loader (4 Marks)', 'label': 0, 'confidence': 0.3954141}

{'text': 'b). Explain the following System development life cycle stages in program development. (6 Marks)', 'label': 1, 'confidence': 0.703869}

{'text': 'i. Feasibility study ii. System investigation ili, System design', 'label': 0, 'confidence': 0.36832663}

{'text': 'Cc). Differentiate between pseudo code and a flowchart. (2 Marks)', 'label': 0, 'confidence': 0.3876341}

{'text': '(. Using a in a pseudo code and a flowchart, write a solution of a problem to calculate the area of a circle using the formula area = J) r°, where JI=3.14 and r is radius. (6 Marks)', 'label': 1, 'confidence': 0.5643045}

{'text': 'wr, a structured program that calculates the area of a circle using the formula area = r?, where J1=3.14', 'label': 0, 'confidence': 0.48398456}

{'text': 'D andris rads. (6 Marks f). Differentiate between structured programming and modular programming. (4 Marks)', 'label': 0, 'confidence': 0.31424212}

{'text': 'g). Outiine any two benefits of structured programming. (2 Marks)', 'label': 0, 'confidence': 0.43827954}

{'text': 'in the following principles used in programming: (4 Marks)', 'label': 0, 'confidence': 0.45259267}

{'text': '[in programming, giving an illustration using a flowchart for each. ia (6 Marks)', 'label': 0, 'confidence': 0.4288359}

{'text': 'QUESTION 1 [30 MARKS] COMPULSORY a) Explain the two types of functions used in C program, giving an example of each. (4 Marks)', 'label': 0, 'confidence': 0.3722219}

```
{'text': 'b) Write a program in C programming language that allows a user to
input a whole number of X in main program and uses two user defined functions
name, square() to compute the square of the number X and cube() to compute the
cube of X, then veer the X, result of the square and cube in the main program.
Use if() to select each subprogram at a time to execute. ; (10 Marks)', 'label':
1, 'confidence': 0.79671305}
{'text': 'c) Explain the program structure of a C program, giving relevant
examples using the program in Q1 (b). (5 Marks)', 'label': 1, 'confidence':
0.78570193}
{'text': 'd) Differentiate between an array, a record, a pointer and a file,
then write a C program that implements an array, a record and a file using a
structure (record) consisting of itemname and itemcode to store data of 20 items
in a retail shop computer and displays a list of the 20 items details reading
from file. Given that item name is a string of 25 characters, item code is a
number of 4 digits, record name is item, logical file is itemfile, and physical
file is "C:\\item\\itemf.dat'. (11 Marks)', 'label': 1, 'confidence':
0.69627863}
{'text': 'QUESTION 2 [20 MARKS] a) Explain the three concepts used in structured
programming. (9 Marks)', 'label': 0, 'confidence': 0.41543928}
{'text': 'b) Write a C program that that has three subprograms, first subprogram
to input a list of 18 customers names as string and ; deposit as number with
decimal point, second subprogram to compute sum of the deposit of all customers
and third ubprogram to display the list the 18 customers names and deposit, and
sum of deposits. (11 Marks)', 'label': 1, 'confidence': 0.8002752}
{'text': 'sed in structured programming. (9 Marks)', 'label': 0, 'confidence':
0.3972308}
{'text': '(0) , npute the area of acircle and to compute perimeter of a circle,
(11. Marks)', 'label': 0, 'confidence': 0.40747508}
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{'text': '; name, idumber, and course and then (8 Marks)', 'label': 0,
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{'text': '(9 Marks)', 'label': 0, 'confidence': 0.34867522}
{'text': '(6 Marks)', 'label': 0, 'confidence': 0.34867522}
```

-----EXTRACTED QUESTIONS-----

- (a) For each of the following scenarios, use a supply and demand diagram to illustrate the effect of a given shock on the equilibrium price and quantity u in the specified competitive market. Explain whether there is a shift in the demand curve, the supply, or neither i) An unexpected temporary heat wave hits the South Coast. Show the effect in the ice cream market in Mombasa. (3 Marks)  
 ii) The government introduces a tax on ice cream which is paid by producers. What is the effect in the ice cream market? (3 Marks)
- (b) The price elasticity of demand  $-0.45$  in the long run. Why would the demand for crude oil be price in the short-run and (3 Marks)
- (c) Briefly explain why a supply shock leads to stagflation. (3 Marks)

- (d) In the context of financial markets, distinguish between informational efficiency. (4 Marks)
- . Analyze the 2 limitations of different machine learning algorithms (such as decision trees, neural networks, and support vector machines) in predicting credit default risk (4 marks)
- "Risk identification forms the foundation of comprehensive risk management. Given the evolution of risks in the modern global context, including technological, environmental, and geopolitical risks, traditional risk identification methods may need to be supplemented or rethought."
- © 4-1) Identify seven reasons why man is consider' naa (emote . fall o! J ie Biblical apie? eee ay, (6 marks)
- b) State six causes of sin from y. «) Wdentify ways in which Christian (7 marks) rshipped God when tt faster (5 marks)
- 2a) Name seven plagues that God used to de b) Identify eigh ) Give the similarities between the Jewish Passover an t ways in which the Israelites wo! id Christians i (7 marks)
- 3 a) Give seven ways in which Elijah succeeded as a Prophet of God. 5) Outline the conditions that made it difficult for Prophet Elijah to stop idolatry 1" Israel (7 marks)
- c) Identify six ways in which Christians enhance the true worship of God today (6 mark)
- diay One y Par ofl Md ; . - 4a) Explain the | teachings of prophet Amos on Israel election. (7 marks)
- b) State six ways in which God would punish Israel for her evils according to Amos. (6 marks)
- (©) Give five reasons why Christians go to church of announced his
- (b) Outline what Angel Gabriel revealed about John the Baptist when he (7mks)
2. (a) Explain the healing of the paralytic in Luke 5:18-26 7mks)
- (b) List seven expectations of the Jews concerning the Messiah ( ° Ss
- (6) In what ways are Christians preparing for th coming of the Messiah Gmks)
- 3: (©) Give six reasons that the Jewish leaders had to have Jesus arrested and even executed (6mks)
- (b) State 8 extra-ordinary things that took place at the time of Jesus crucified/execution (8mks)
- (c) State six problems that Christian today encounter while trying to practice their faith (6mks)
- (b) Narrate peters message on the day of Pentecost (8mks)
- (c) Give reasons why people abuse alcohol and other drugs today (Smks)
5. (a) State the role of the holy spirit as taught by Jesus (8mks)
- (b) State Any Seven characteristics of Love (7mks)
- (C) List any \$ gilts of the Holy Spirit (Smks)
- 6, (a) Explain the analogy of the People of God as used (0 express the unity of believers (7mks)
- (b) What are the causes of disunity in the church today? (6mks)
- (c) How is the unity believers expressed in the church today (7mks)
40. Give aaa reaty which marked the colonial sphere of influence in East Africa in 1886. (1 mark)
- |. Give two reasons why the British used indirect rule in some parts of Kens

(2-marks)

Give two features of the political organizations which were formed in Kenya before 1939. (2 marks)

. Give one special court in Kenya. (1 mark)

18. a) Give five reasons for the migration 'Tthe Somali in Kenya during the pre-colonial period. (10 marks)

b) Describe the political organization o (3 marks)

b) Explain six effects of long distance trade on the people of Kenya 20. a)

State five terms of the Devonshire White Paper of 1923. (5 marks)

b) Explain five problems faced by Africans in Urban Centres during the colonial period. (10 marks)

21. a) Give five features of African Socialism in Kenya. (5 marks)

) Explain five factors that have influenced industrial

22. a) Give three conditions a ps (12 marks)

) Explain six features ofthe Constitution of Kenya (2010)

23. a) Outline the composition of the County Executive Committee, G marks)

) Describe the law making process atthe National level in Kenya. (12 marks)

24, a) State five objectives of Devolution. b) Explain five ways in which the government of Kenya ensures effective utilization of public funds. (10 marks)

. Analyze the 2 limitations of different machine learning algorithms (such as decision trees, neural networks, and support vector machines) in predicting credit default risk (4 marks)

"Risk identification forms the foundation of comprehensive risk management. Given the evolution of risks in the modern global context, including technological, environmental, and geopolitical risks, traditional risk identification methods may need to be supplemented or rethought."

(a) For each of the following scenarios, use a supply and demand diagram to illustrate the effect of a given shock on the equilibrium price and quantity u in the specified competitive market. Explain whether there is a shift in the demand curve, the supply, or neither i) An unexpected temporary heat wave hits the South Coast. Show the effect in the ice cream market in Mombasa. (3 Marks) ii) The government introduces a tax on ice cream which is paid by producers. What is the effect in the ice cream market? (3 Marks)

(b) The price elasticity of demand  $-0.45$  in the long run. Why would the demand

for crude oil be price in the short-run and (3 Marks)

(c) Briefly explain why a supply shock leads to stagflation. (3 Marks)

(d) In the context of financial markets, distinguish betwee informational efficiency. (4 Marks)

(a) Suppose Kisumu can produce 120 million bushels of wheat if it uses all of its pro- ductive resources in the wheat industry, or 80 million yards of cloth if it uses all of its resources in the cloth industry. Use a diagram to illustrate your answers to the following questions. Label the diagram and explain in words.

(ii) Suppose Kisumu's consumers choose to consume 70 million bushels of wheat.

(iii) What is the true price of a bushel of wheat in Kisumu? (2 marks)

(iv) Can Kisumu produce 60 million bushels of wheat and 50 million yards of cloth?

(b) If you buy 100 shares of East African Breweries stock

- (i) To what are you entitled? {3 marks}
- (ii) What is the most money you can make on this investment over the next year? {2 marks}
- (iii) If you paid KES180 per share, what is the most money you could lose over the year? {2 marks} [15 marks]
- b) In what ways does the coming of the Holy Spirit transform the life of Peter on the Day of Pentecost?
- c) What activities of the church in Kenya show that the Holy Spirit is working among them? (5 Marks)
- 2a) From the teachings of Jesus, what role would the Holy Spirit play? (8 Marks)
- b) Describe the fruits of the Holy Spirit according to Galatians 5:22-26. (6 Marks)
- c) In what ways do Christians demonstrate the fruit of generosity? (6 Marks)
- 3a) Explain how the unity of believers is expressed in the symbol of the body of Christ. (7 Marks)
- b) State teachings of Peter concerning the people of God. (1\* Peter 2:9- 10) (7 Marks)
- c) How do churches discipline those who cause disunity in the church today? (6 Marks)
- a) According to Isaiah's prophecy state the names given to the Messiah, and b) How did Jesus fulfill Isaiah's prophecy of the suffering servant? c) How should Christians respond to those who are opposing them? (8 mks)
- a) Outline the role of John the Baptist. (7 mks)
- b) State the lessons that Christians learn from the annunciation of the birth of John the Baptist.
- c) State the reasons: why Jesus was baptized yet he was sinless. (6 mks)
- b) List the occasions when Jesus was tempted. (6 mks)
- c) Outline the reasons why Christians should repent their sins. (6 mks)
- 4. a) Describe the parable of the Sower. (8 mks)
- b) Why did Jesus use parables in his teachings? (6 mks)
- b) Describe the events that took place on the day of Pentecost (7 mks)
- c) Describe how the unity of believers is expressed in the image of the vine and the branches. (John 15: 1-10) (7 mks)
- a) Give biblical stories of creation and how they are given to human beings by God. (4 mks)
- a) Describe the call of Abraham. (4 mks)
- b) Explain the characteristics of a covenant. (4 mks)
- c) Identify seven examples of covenants made in Kenya today (7m 3. a) Give five reasons why Israelites demanded for a king. (5 mks)
- b) What lessons can modern political leaders learn from king David. (8 mks)
- c) How do Christians in Kenya demonstrate their faith in God? (7 mks)
- 4. a) State four differences between traditional African prophets and the Old Testament prophets. (8 mks)
- b) Outline the social injustices condemned by prophet Amos in Israel. In what ways is the church in Kenya promoting justice in society? (6 mks)
- b) In what ways did prophet Jeremiah suffer while carrying out his work in Judah. (6 mks)
- c) List eight moral values that Christians can acquire from the life of prophet

Jeremiah. (8 mks)

6. a) List eight places used for worship in Traditional African communities. (8 mks)

b) Give six reasons why sacrifices were made in Traditional African communities. (6 mks)

c) How do Christians in Kenya show respect for places of worship? (6 mks)

b) Describe the events that were associated with the birth of John the Baptist, (Bmks)

©) Give reasons why the birth of a child is celebrated in modern society, (6mks)

2. a) Describe the transfiguration of Jesus as recorded in Luke 9:28 - 37, " (4mks)

b) Outline the instructions that Jesus gave the twelve disciples when he commissioned them

e reasons why disciples are called today. (Smks)

five ways in which the Holy spirit manifested himself on the day of Pentecost.

[are the reasons why some Christians live in Christianity today, (8mks)

2. State one military alliance that was formed by European nations before the First World War. (1mark)

(a) Suppose that you have the following investment plans 1) You deposit KES10,000 every end of the year for next 10 years

(b) Table 3 shows the quantity and price of bread and butter produced in country Z between 2009 and 2013. le 3: Price and quantity of bread and butter produced in country z hat only bree here applicable):

| how it differs from the Newton-Raphson (3 Marks)

(i) State FOUR importance of personal hygiene [4Mks]

(ii) State and explain any FIVE ways by which alcohol use raises the risk of cancer [6Mks] d. (i) State FOUR importance of personal hygiene x [4Mks]

(ii) State and explain any FIVE methods of Prevention and Control of HIV/AIDs [10Mks]

(a) State and explain any TEN factors that affect malaria transmission [10Mks]

(b) Describe any FIVE malaria prevention and control strategies [10Mks]

(a) Giving examples for each, classify the SEX known addictive drugs and their mode of intake [10Mks]

(b) State and eexplain FIVE ways by which alcohol decreases resistance to HIV

(a) Describe FIVE Goals of Antiretroviral therapy in HIV/AIDS treatments [10Mks]

(b) Discuss FIVE ways of positive living with HIV/AIDs [10Mks] lifestyle factors that contribute to many of such health problems? [10Mks]

b). Explain the following System development life cycle stages in program development. (6 Marks)

(. Using a in a pseudo code and a flowchart, write a solution of a problem to calculate the area of a circle using the formula  $area = \pi r^2$ , where  $\pi = 3.14$  and  $r$  is radius. (6 Marks)

b) Write a program in C programming language that allows a user to input a whole number of  $X$  in main program and uses two user defined functions name, square() to compute the square of the number  $X$  and cube() to compute the cube of  $X$ , then veer the  $X$ , result of the square and cube in the main program. Use if() to select each subprogram at a time to execute. ; (10 Marks)

c) Explain the program structure of a C program, giving relevant examples using

the program in Q1 (b). (5 Marks)

d) Differentiate between an array, a record, a pointer and a file, then write a C program that implements an array, a record and a file using a structure (record) consisting of itemname and itemcode to store data of 20 items in a retail shop computer and displays a list of the 20 items details reading from file. Given that item name is a string of 25 characters, item code is a number of 4 digits, record name is item, logical file is itemfile, and physical file is "C:\item\itemf.dat". (11 Marks)

b) Write a C program that has three subprograms, first subprogram to input a list of 18 customers names as string and ; deposit as number with decimal point, second subprogram to compute sum of the deposit of all customers and third subprogram to display the list the 18 customers names and deposit, and sum of deposits. (11 Marks)

"Paul" and "John" respectively, Explain the following (8 marks)

----- 119 questions, extracted from 346 lines -----

Using the BERT model to predict, then printing the results

```
[ ]: from transformers import BertForSequenceClassification, BertTokenizer
import torch

# Assume you have a directory 'models/BERT' where the fine-tuned model is saved
model_dir = 'models/BERT'
model = BertForSequenceClassification.from_pretrained(model_dir)
tokenizer = BertTokenizer.from_pretrained(model_dir)

# Save to computing device i.e. 'cuda' or 'cpu'
model.to(device)

text = []
all_questions = []

for line in refined.split('\n'):
    # Encode the line using the tokenizer
    encoded_line = tokenizer.encode_plus(
        line,
        add_special_tokens=True, # Add '[CLS]' and '[SEP]'
        max_length=64, # Maximum length for the text, truncate if longer
        padding='max_length', # Pad shorter sentences
        return_attention_mask=True,
        return_tensors='pt', # PyTorch tensors format
    )

    # Get input ids and attention mask tensors, and move them to the device
    input_ids = encoded_line['input_ids'].to(device)
    attention_mask = encoded_line['attention_mask'].to(device)
```

```

# Predict the label using the BERT model
with torch.no_grad():
    outputs = model(input_ids, attention_mask=attention_mask)
    prediction = torch.argmax(outputs.logits, dim=1).cpu().numpy()[0] #
    ↪ Convert to numpy and get the label
    confidence = torch.softmax(outputs.logits, dim=1).max().item() #
    ↪ Softmax to get probabilities, and then the max for confidence

# Append the result to the text list
text.append({'text': line, 'label': prediction, 'confidence': confidence})

# Add to all_questions if it's predicted as a question with high confidence
if prediction == 1 and confidence > 0.5:
    all_questions.append(line)

# Convert list of dictionaries to DataFrame
df = pd.DataFrame(text)

# Save to CSV, excluding the index
df.to_csv('predictions/BERT.csv', index=False, columns=['text',
    ↪ 'label', 'confidence'])

print("""

-----OUTPUT-----""")
for t in text:
    print(t)
print("""

-----EXTRACTED QUESTIONS-----

""")
for q in all_questions:
    print(q)

print("\n----- " + str(len(all_questions)) + " questions, extracted from
    ↪ " + str(len(text)) + " lines -----")

```

```

-----OUTPUT-----
{'text': 'DSA 8105: FUNDAMENTAL CONCEPTS IN a', 'label': 0, 'confidence':
0.997465968132019}
{'text': 'DATE: 6% September 2021', 'label': 0, 'confidence':
0.9963143467903137}

```



{'text': 'Instructions', 'label': 0, 'confidence': 0.9969125986099243}

{'text': 'Ibs This examination consists of FIVE questions. 2s Answer Question ONE (COMPULSORY) and any other Two ques e', 'label': 0, 'confidence': 0.995567262172699}

{'text': 'QUESTION ONE (20 MARKS)', 'label': 0, 'confidence': 0.9800205230712891}

{'text': '(a) For each of the following scenarios, use a supply and demand diagram to illustrate the effect of a given shock on the equilibrium price and quantity u in the specified competitive market. Explain whether there is a shift in the demand curve, the supply, or neither i) An unexpected temporary heat wave hits the South Coast. Show the effect in the ice cream market in Mombasa. (3 Marks)', 'label': 1, 'confidence': 0.998121440410614}

{'text': 'ii) The government introduces a tax on ice cream which is paid by producers. What is the effect in the ice cream market? (3 Marks)', 'label': 1, 'confidence': 0.9973878264427185}

{'text': 'for crude oil in country H has been estimated to be -0.06', 'label': 0, 'confidence': 0.9944232106208801}

{'text': '(b) The price elasticity of demand \_0.45 in the long run. Why would the demand for crude oil be price in the short-run and (3 Marks)', 'label': 1, 'confidence': 0.9975624084472656}

{'text': 'elastic in the long run than in the short run? Briefly explain.', 'label': 1, 'confidence': 0.9927365779876709}

{'text': '(c) Briefly explain why a supply shock leads to stagflation. (3 Marks)', 'label': 1, 'confidence': 0.9978095889091492}

{'text': 'n economic efficiency and', 'label': 0, 'confidence': 0.9964704513549805}

{'text': '(d) In the context of financial markets, distinguish betwee informational efficiency. (4 Marks)', 'label': 1, 'confidence': 0.9968871474266052}

{'text': 'Page 1 of 3', 'label': 0, 'confidence': 0.9967811107635498}

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{'text': 'Examine the importance of data quality in risk analytics, discuss the potential impact of incomplete or incorrect data on risk prediction models, and propose strategies for mitigating these issues. (4 marks)', 'label': 1, 'confidence': 0.9967585206031799}

{'text': '. Analyze the 2 limitations of different machine learning algorithms (such as decision trees, neural networks, and support vector machines) in predicting credit default risk (4 marks)', 'label': 1, 'confidence': 0.9970292448997498}

{'text': 'Besides its involvement in stress testing, analyze three other ways that the risk committee is able to influence risk culture and capabilities in an organization. Provide examples of recent corporate governance scenarios where the risk committee has played a pivotal role in fostering an effective risk culture. (6 Marks)', 'label': 1, 'confidence': 0.9981314539909363}

{'text': 'Critically assess the benefits and criticisms of regulatory frameworks for banks and insurance companies. Use contemporary examples to illustrate your points and focus on the effects of recent changes in regulatory expectations, such as the increased focus on individual accountability and documentation. (8 marks)', 'label': 1, 'confidence': 0.9977999329566956}

{'text': '"Risk identification forms the foundation of comprehensive risk management. Given the evolution of risks in the modern global context, including technological, environmental, and geopolitical risks, traditional risk identification methods may need to be supplemented or rethought."', 'label': 1, 'confidence': 0.9895888566970825}

{'text': 'Page 1 of 4 (7 marks)', 'label': 0, 'confidence': 0.9766911864280701}

{'text': '© 4-1) Identify seven reasons why man is consider' naa (emote . fall o! J ie Biblical apie? eee ay, (6 marks)', 'label': 1, 'confidence': 0.9975097179412842}

{'text': 'b) State six causes of sin from y. «) Wdentify ways in which Christian (7 marks)', 'label': 1, 'confidence': 0.9980310797691345}

{'text': 'or in EgyPt strate his power in he hey were in the desert (8 marks)', 'label': 1, 'confidence': 0.9937090873718262}

{'text': 'rshipped God when tt faster (5 marks)', 'label': 1, 'confidence': 0.9898843765258789}

{'text': '2a) Name seven plagues that God used to de b) Identify eigh ) Give the similarities between the Jewish Passover an t ways in which the Israelites wo! id Christians i (7 marks)', 'label': 1, 'confidence': 0.9980096220970154}

{'text': '3 a) Give.seven ways in which Elijah succeeded as a Prophet of God. 5) Outline the conditions that made it difficult for Prophet Elijah to stop idolatry 1" Israel (7 marks)', 'label': 1, 'confidence': 0.997771143913269}

{'text': 'c) Identify six ways in which Christians enhance the true worship of God today (6 mark)', 'label': 1, 'confidence': 0.9980037808418274}

{'text': 'diay One y Par ofl Md ; . - 4a) Explain the | teachings of prophet Amos on Israel election. (7 marks)', 'label': 1, 'confidence': 0.9978961944580078}

{'text': 'b) State six ways in which God would punish Israel for her evils according to Amos. (6 marks)', 'label': 1, 'confidence': 0.9980023503303528}

{'text': 'Jessions Christians learn from Israel's election. (6 marks)', 'label': 1, 'confidence': 0.9884450435638428}

{'text': '“ ” (Smks)', 'label': 0, 'confidence': 0.9774110913276672}

{'text': '(7 marks)', 'label': 0, 'confidence': 0.963639497756958}

{'text': 'to handle cases of dishonesty. (8 marks)', 'label': 1, 'confidence': 0.9895094633102417}

{'text': '-', 'label': 0, 'confidence': 0.9817854762077332}

{'text': 'Gat Gof veuy : aes ssf ? © marks)', 'label': 0, 'confidence': 0.8606768846511841}

{'text': 'Geittns (Smks)', 'label': 0, 'confidence': 0.9940937161445618}

{'text': '(©) Give five reasons why Christians go to church of announced his', 'label': 1, 'confidence': 0.7713752388954163}

{'text': '(b) Outline what Angel Gabriel revealed about John the Baptist when he (7mks)', 'label': 1, 'confidence': 0.9979331493377686}

{'text': 'birth to Zachariah (8mks)', 'label': 0, 'confidence': 0.9816340804100037}

{'text': '2. (a) Explain the healing of the paralytic in Luke 5:18-26 7mks)', 'label': 1, 'confidence': 0.9980109333992004}

{'text': '(b) List seven expectations of the Jews concerning the Messiah ( ° Ss', 'label': 1, 'confidence': 0.9952371120452881}

{'text': '(6) In what ways are Christians preparing for th coming of the Messiah Gmks)', 'label': 1, 'confidence': 0.9976633787155151}

{'text': '3: (©) Give six reasons that the Jewish leaders had to have Jesus arrested and even executed (6mks)', 'label': 1, 'confidence': 0.9978827834129333}

{'text': '(b) State 8 extra-ordinary things that took place at the time of Jesus crucified/execution (8mks)', 'label': 1, 'confidence': 0.9964074492454529}

{'text': '(c) State six problems that Christian today encounter while trying to practice their faith (6mks)', 'label': 1, 'confidence': 0.9978815913200378}

{'text': '(b) Narrate peters message on the day of Pentecost (8mks)', 'label': 1, 'confidence': 0.9967939257621765}

{'text': '(c) Give reasons why people abuse alcohol and other drugs today (Smks)', 'label': 1, 'confidence': 0.9976805448532104}

{'text': '5. (a) State the role of the holy spirit as taught by Jesus (8mks)', 'label': 1, 'confidence': 0.9977795481681824}

{'text': '(b) State Any Seven characteristics of Love (7mks)', 'label': 1, 'confidence': 0.9974237680435181}

{'text': '(C) List any \$ gilts of the Holy Spirit (Smks)', 'label': 1, 'confidence': 0.9959993362426758}

{'text': '6, (a) Explain the analogy of the People of God as used (0 express the unity of believers (7mks)', 'label': 1, 'confidence': 0.9979764819145203}

{'text': '(b) What are the causes of disunity in the church today? (6mks)', 'label': 1, 'confidence': 0.9972440004348755}

{'text': 'm|', 'label': 0, 'confidence': 0.9866430759429932}

{'text': '(c) How is the unity believers expressed in the church today (7mks)', 'label': 1, 'confidence': 0.9977487921714783}

{'text': 'mks)', 'label': 0, 'confidence': 0.9927194118499756}

{'text': 't', 'label': 0, 'confidence': 0.9912022352218628}

{'text': 'HYeqjeme AH Abell. | \\\', 'label': 0, 'confidence': 0.9922896027565002}

{'text': 'A/ Be ee (25 MARKS)', 'label': 0, 'confidence': 0.9744790196418762}

{'text': 'efine Constituti inswer All questions in this Section. 2. Identify ero pint Monarchy as a form of government. (1 mark)', 'label': 1, 'confidence': 0.997769832611084}

{'text': 'A. Which is okccre ne where the remains of Kenyapitheus were discovered in Kenya: (2 marks)', 'label': 1, 'confidence': 0.9956014156341553}

{'text': 'A. Stats two anette uence (mak rea me ities obtained from the Kenyan coast during the long distance trade, (2 marks)', 'label': 1, 'confidence': 0.9963191747665405}

{'text': '2 Susceue iiae the government may limit one's freedom of movement in Kenya. (1 mark)', 'label': 1, 'confidence': 0.9958723187446594}

{'text': 'pee eS ae (2 marks)', 'label': 1, 'confidence': 0.9433470368385315}

{'text': 'Gent te et consent edn ye (1 mark)', 'label': 1, 'confidence': 0.9867905974388123}

{'text': 'Sts tro yes org eae exercised in Kenya. (2-marks)', 'label': 1, 'confidence': 0.996070384979248}

{'text': '40. Give aaa reaty which marked the colonial sphere of influence in East Africa in 1886. (1 mark)', 'label': 1, 'confidence': 0.9978445768356323}

{'text': '|. Give two reasons why the British used indirect rule in some parts of Kens (2-marks)', 'label': 1, 'confidence': 0.9967610239982605}

{'text': '¥il Adonis} one estou way aries werent allowed to wow cnsu crops m Kenge lore 1224-0 te)', 'label': 0, 'confidence': 0.9915259480476379}

{'text': 'Give two features of the political organizations which were formed in Kenya before 1939. (2 marks)', 'label': 1, 'confidence': 0.9971451163291931}

{'text': '. Give one special court in Kenya. (1 mark)', 'label': 1, 'confidence': 0.9963020086288452}

{'text': '| Beside unity, name the other pillar of Nyayoism. (1 mark)', 'label': 1, 'confidence': 0.9972510933876038}

{'text': '\* |identify two education commissions in Kenya since independence. (2:marks)', 'label': 1, 'confidence': 0.997670590877533}

{'text': '(1 mark)', 'label': 0, 'confidence': 0.9733898043632507}

{'text': 'Outline one function of the speaker of the County Assembly', 'label': 0, 'confidence': 0.5533573627471924}

{'text': 'State two types of government expenditure in Kenya. (@ marks)', 'label': 1, 'confidence': 0.997163712978363}

{'text': 'SECTION B: (45 MARKS)', 'label': 0, 'confidence': 0.9750891327857971}

{'text': '"Answer Any three questions in this Section. ofthe Luo from their original homeland into Kenya. (5 marks)', 'label': 1, 'confidence': 0.9911702871322632}

{'text': '18. a) Give five reasons for the migration 'Tthe Somali in Kenya during the pre-colonial period. (10 marks)', 'label': 1, 'confidence': 0.9982843995094299}

{'text': 'b) Describe the political organization o (3 marks)', 'label': 1, 'confidence': 0.9966351389884949}

{'text': '19, a) State three factors which enabled the Arabs 10 sail from Oman to the Kenyan Coast. (12 marks)', 'label': 1, 'confidence': 0.997734546661377}

{'text': 'b) Explain six effects of long distance trade on the people of Kenya 20. a) State five terms of the Devonshire White Paper of 1923. (5 marks)', 'label': 1, 'confidence': 0.9983264803886414}

{'text': 'b) Explain five problems faced by Africans in Urban Centres during the colonial period. (10 marks)', 'label': 1, 'confidence': 0.9982618689537048}

{'text': '21. a) Give five features of African Socialism in Kenya. (5 marks)', 'label': 1, 'confidence': 0.9981018900871277}

{'text': 'lization in Kenya since independence. (10marks)', 'label': 1, 'confidence': 0.9949073195457458}

{'text': ') Explain five factors that have influenced industrial', 'label': 1, 'confidence': 0.9902127385139465}

{'text': 'Answer Any Two questions from this section. erson should meet to qualify to be a citizen by birth in Kenya. G marks)', 'label': 1, 'confidence': 0.9960340857505798}

{'text': '22. a) Give three conditions a ps (12 marks)', 'label': 1, 'confidence': 0.9970681071281433}

{'text': ') Explain six features ofthe Constitution of Kenya (2010)', 'label': 1, 'confidence': 0.9936513304710388}

{'text': '23. a) Outline the composition of the County Executive Committee, G marks)', 'label': 1, 'confidence': 0.9978665709495544}

{'text': ') Describe the law making process atthe National level in Kenya. (12 marks)', 'label': 1, 'confidence': 0.9976925849914551}

{'text': '(5 marks)', 'label': 0, 'confidence': 0.9632251858711243}

{'text': '24, a) State five objectives of Devolution. b) Explain five ways in which the government of Kenya ensures effective utilization of public funds. (10 marks)', 'label': 1, 'confidence': 0.998247504234314}

{'text': 'io Maseno School Mock Committee 2023 co :', 'label': 0, 'confidence': 0.9953798055648804}

{'text': 'Strathmore', 'label': 0, 'confidence': 0.9973676800727844}

{'text': 'UNIVERSITY', 'label': 0, 'confidence': 0.9974117875099182}

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{'text': 'Time: 2.5 Hours', 'label': 0, 'confidence': 0.9972924590110779}

{'text': 'DATE: 17" July 2022', 'label': 0, 'confidence': 0.9964800477027893}

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{'text': '1p', 'label': 0, 'confidence': 0.994981586933136}

{'text': 'Examine the importance of data quality in risk analytics, discuss the potential impact of incomplete or incorrect data on risk prediction models, and propose strategies for mitigating these issues. (4 marks)', 'label': 1, 'confidence': 0.9967585206031799}

{'text': '. Analyze the 2 limitations of different machine learning algorithms (such as decision trees, neural networks, and support vector machines) in predicting credit default risk (4 marks)', 'label': 1, 'confidence': 0.9970292448997498}

{'text': 'Besides its involvement in stress testing, analyze three other ways that the risk committee is able to influence risk culture and capabilities in an organization. Provide examples of recent corporate governance scenarios where the risk committee has played a pivotal role in fostering an effective risk culture. (6 Marks)', 'label': 1, 'confidence': 0.9981314539909363}

{'text': 'Critically assess the benefits and criticisms of regulatory frameworks for banks and insurance companies. Use contemporary examples to illustrate your points and focus on the effects of recent changes in regulatory expectations, such as the increased focus on individual accountability and documentation. (8 marks)', 'label': 1, 'confidence': 0.9977999329566956}

{'text': '"Risk identification forms the foundation of comprehensive risk management. Given the evolution of risks in the modern global context, including technological, environmental, and geopolitical risks, traditional risk identification methods may need to be supplemented or rethought."', 'label': 1, 'confidence': 0.9895888566970825}

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{'text': 'DATE: 6% September 2021', 'label': 0, 'confidence': 0.9963143467903137}

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{'text': 'Ibs This examination consists of FIVE questions. 2s Answer Question ONE (COMPULSORY) and any other Two ques e', 'label': 0, 'confidence': 0.995567262172699}

{'text': 'QUESTION ONE (20 MARKS)', 'label': 0, 'confidence': 0.9800205230712891}

{'text': '(a) For each of the following scenarios, use a supply and demand diagram to illustrate the effect of a given shock on the equilibrium price and quantity u in the specified competitive market. Explain whether there is a shift in the demand curve, the supply, or neither i) An unexpected temporary heat wave hits the South Coast. Show the effect in the ice cream market in Mombasa. (3 Marks)', 'label': 1, 'confidence': 0.998121440410614}

{'text': 'ii) The government introduces a tax on ice cream which is paid by producers. What is the effect in the ice cream market? (3 Marks)', 'label': 1, 'confidence': 0.9973878264427185}

{'text': 'for crude oil in country H has been estimated to be -0.06', 'label': 0, 'confidence': 0.9944232106208801}

{'text': '(b) The price elasticity of demand \_0.45 in the long run. Why would the demand for crude oil be price in the short-run and (3 Marks)', 'label': 1, 'confidence': 0.9975624084472656}

{'text': 'elastic in the long run than in the short run? Briefly explain.', 'label': 1, 'confidence': 0.9927365779876709}

{'text': '(c) Briefly explain why a supply shock leads to stagflation. (3 Marks)', 'label': 1, 'confidence': 0.9978095889091492}

{'text': 'n economic efficiency and', 'label': 0, 'confidence': 0.9964704513549805}

{'text': '(d) In the context of financial markets, distinguish between informational efficiency. (4 Marks)', 'label': 1, 'confidence': 0.9968871474266052}

{'text': 'Page 1 of 3', 'label': 0, 'confidence': 0.9967811107635498}

{'text': 'STRATHMORE UNIVERSITY', 'label': 0, 'confidence': 0.9977138042449951}

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{'text': 'Attempt any Four (4) questions', 'label': 0, 'confidence': 0.9901897311210632}

{'text': 'Question 1', 'label': 1, 'confidence': 0.7429730296134949}

{'text': '(a) Suppose Kisumu can produce 120 million bushels of wheat if it uses all of its productive resources in the wheat industry, or 80 million yards of cloth if it uses all of its resources in the cloth industry. Use a diagram to illustrate your answers to the following questions. Label the diagram and explain in words.', 'label': 1, 'confidence': 0.9904500842094421}

{'text': '(i) Assuming constant opportunity costs, draw Kisumu's production-possibility curve.', 'label': 1, 'confidence': 0.993922770023346}

{'text': '(Place wheat on the x-axis) {2 marks}', 'label': 1, 'confidence': 0.9968659281730652}

{'text': '(ii) Suppose Kisumu's consumers choose to consume 70 million bushels of wheat.', 'label': 1, 'confidence': 0.9973292350769043}

{'text': 'How much cloth will Kisumu then be able to produce? {2 mark}', 'label': 1, 'confidence': 0.997200608253479}

{'text': '(iii) What is the true price of a bushel of wheat in Kisumu? (2 marks)', 'label': 1, 'confidence': 0.996268093585968}

{'text': '(iv) Can Kisumu produce 60 million bushels of wheat and 50 million yards of cloth?', 'label': 1, 'confidence': 0.9973223805427551}

{'text': 'If so why? {2 marks}', 'label': 1, 'confidence': 0.9889617562294006}

{'text': '(b) If you buy 100 shares of East African Breweries stock', 'label': 1, 'confidence': 0.9969327449798584}

{'text': '(i) To what are you entitled? {3 marks}', 'label': 1, 'confidence': 0.9940312504768372}

{'text': '(ii) What is the most money you can make on this investment over the

next year? {2 marks}', 'label': 1, 'confidence': 0.9968509078025818}

{'text': '(iii) If you paid KES180 per share, what is the most money you could lose over the year? {2 marks} [15 marks]', 'label': 1, 'confidence': 0.9951574206352234}

{'text': 'OLOOL dj MID AEPES SEC SCHOOL [7 sil FORN: mane EXAM 2024 loLoontes ey Vc 5 i 3 TER PES seco,', 'label': 0, 'confidence': 0.9965631365776062}

{'text': 'ME. |» OlCa Ss ign eauite 6.19. P.O. siete AR r. ANSWER ALL Got aaa (ene + a) Relate ¢| at re message of Peter on the Day of Pentecost. (10 Marks)', 'label': 1, 'confidence': 0.9959076642990112}

{'text': 'b) In what al ways é 2 iid the coming of the Holy Spirit transform the life of Peter on the Day of ~~, 'label': 1, 'confidence': 0.9939606189727783}

{'text': 'Pentecost? (5 Marks)', 'label': 1, 'confidence': 0.9732214212417603}

{'text': 'c) What activities of the church in Kenya show that the Holy Spirit is working among them? (5 Marks)', 'label': 1, 'confidence': 0.9970231652259827}

{'text': '2a) From the teachings of Jesus, what role would the Holy Spirit play? (8 Marks)', 'label': 1, 'confidence': 0.9973549842834473}

{'text': 'b) Describe the fruits of the Holy Spirit according to Galatians 5:22-26. (6 Marks)', 'label': 1, 'confidence': 0.9979592561721802}

{'text': 'c) In what ways do Christians demonstrate the fruit of generosity? (6 Marks)', 'label': 1, 'confidence': 0.9973969459533691}

{'text': '3a) Explain how the unity of believers is expressed in the symbol of the body of Christ. (7 Marks)', 'label': 1, 'confidence': 0.9982789754867554}

{'text': 'b) State teachings of Peter concerning the people of God. (1\* Peter 2:9- 10) (7 Marks)', 'label': 1, 'confidence': 0.9978881478309631}

{'text': 'c) HBw do churches discipline those who cause disunity in the church today? (© Marks)', 'label': 1, 'confidence': 0.9965433478355408}

{'text': 'a) According to Isaiah's prophecy state the names given to the Messiah, ic b) How did Jesus fultill Isaiah's prophecy of the suffering servant eat ¢) How should Christians respond to those who are opposing them? (8 mks)", 'label': 1, 'confidence': 0.9980143308639526}

{'text': 'a) Outline the role of John the Baptist. (7 mks)', 'label': 1, 'confidence': 0.998323380947113}

{'text': 'b) State the lessons that Christians learn from the annunciation of the birth of John the', 'label': 1, 'confidence': 0.9966704249382019}

{'text': 'Baptist. (7:mks)', 'label': 1, 'confidence': 0.9871463775634766}

{'text': 'c) State the reasons: why Jesus was baptized yet he was sinless. (6 mks)', 'label': 1, 'confidence': 0.9981091022491455}

{'text': 'oy a) Narrate the transfiguration of Jesus. (8 mks)', 'label': 1, 'confidence': 0.9973672032356262}

{'text': 'b) List the occasions when Jesus was tempted. (6 mks)', 'label': 1, 'confidence': 0.9982007741928101}

{'text': '¢) Outline the reasons why Christians should repent their sins. (6 mks)', 'label': 1, 'confidence': 0.9983774423599243}

{'text': '4, S a) Describe the parable of the Sower. (8 mks)', 'label': 1, 'confidence': 0.9978785514831543}

{'text': 'b) Why did Jesus use parables in his teachings: (6 mks)', 'label': 1, 'confidence': 0.9975355863571167}

{'text': '¢) Outline the lessons that Christians learn from the above parable.



(6mks)', 'label': 1, 'confidence': 0.9982788562774658}

{'text': 'S . a) List the fruits of the Holy Spirit as taught by St. Paul (7 mks)', 'label': 1, 'confidence': 0.9971789121627808}

{'text': 'b) Describe the events that took place on the day of pentacost (7 mks)', 'label': 1, 'confidence': 0.9980801343917847}

{'text': 'c) Describe how the unity of believers is expressed in the image of the vine and the branches.(John 15: 1-10) (7 mks)', 'label': 1, 'confidence': 0.9980822801589966}

{'text': '+ sistand2 (6mks)', 'label': 0, 'confidence': 0.9929221868515015}

{'text': 'ae y ne' lical stories of creation it in Biblical creation ies given to human beings by (a mks)', 'label': 0, 'confidence': 0.9956757426261902}

{'text': 'F 6 mks)', 'label': 0, 'confidence': 0.9941880702972412}

{'text': 'Kenya take care of the environment ( (8 mks)', 'label': 1, 'confidence': 0.6135383248329163}

{'text': 'a) Describe the call of Abraham. mks)', 'label': 1, 'confidence': 0.9978912472724915}

{'text': 'b) Explain the characteristics of a covenant. eras)', 'label': 1, 'confidence': 0.9978838562965393}

{'text': 'c) Identify seven examples of covenants made in Kenya today (7m 3. a) Give five reasons why Israelites demanded for a king. (5 mks)', 'label': 1, 'confidence': 0.9981560111045837}

{'text': 'b) What lessons can modern political leaders learn from king David. (8 mks)', 'label': 1, 'confidence': 0.9980068802833557}

{'text': 'c) How do Christians in Kenya demonstrate their faith in God? (7 mks)', 'label': 1, 'confidence': 0.9978752136230469}

{'text': '4. a) State four differences between traditional African prophets and the Old Testament prophets. 5: (8 mks)', 'label': 1, 'confidence': 0.9979853630065918}

{'text': '(6 mks)', 'label': 0, 'confidence': 0.9855964183807373}

{'text': 'b) Outline the social injustices condemned by prophet Amos in Israel.', 'label': 1, 'confidence': 0.9973286390304565}

{'text': 'In what ways is the church in Kenya promoting justice in society? (6 mks)', 'label': 1, 'confidence': 0.9962649941444397}

{'text': 'c)', 'label': 0, 'confidence': 0.6540075540542603}

{'text': 'Re, a) With reference to the teaching of prophet Jeremiah on judgement , State six ways in which God would punish the people of Judah. (6 mks)', 'label': 1, 'confidence': 0.99741131067276}

{'text': 'b) In what ways did prophet Jeremiah suffer while carrying out his workin Judah. (6 mks)', 'label': 1, 'confidence': 0.9978343844413757}

{'text': 'c) List eight moral values that Christians can acquire from the life of prophet Jeremiah. (8 mks)', 'label': 1, 'confidence': 0.9983019828796387}

{'text': '6. a) List eight places used for worship in Traditional African communities. (8 mks)', 'label': 1, 'confidence': 0.9981620907783508}

{'text': 'b) Give six reasons why sacrifices were made in Traditional African communities. (6 mks)', 'label': 1, 'confidence': 0.9984034895896912}

{'text': 'c) How do Christians in Kenya show respect for places of worship? (6 mks)', 'label': 1, 'confidence': 0.9974925518035889}

{'text': ', PO, Hoa B47 UZ06,', 'label': 0, 'confidence': 0.9947367310523987}

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{'text': 'CRE. FORM 4 dias', 'label': 0, 'confidence': 0.9954310655593872}

{'text': 'TERM 1, MID TERM EXAM', 'label': 0, 'confidence': 0.994234025478363}

{'text': 'Paper 2,', 'label': 0, 'confidence': 0.9961872696876526}

{'text': 'NAME pei AMIE NMED Eliseo srssresite ADM NOW ARS iovevsvesere', 'label': 0, 'confidence': 0.9965780377388}

{'text': 'STRU IONS, : 1. State the Jewish expectation concerning the Messiah, (6mks)', 'label': 1, 'confidence': 0.9974779486656189}

{'text': 'b) Describe the events that were associated with the birth of John the Baptist, (Bmks)', 'label': 1, 'confidence': 0.9979990124702454}

{'text': '©) Give reasons why the birth of a child is celebrated in modern society, (6mks)', 'label': 1, 'confidence': 0.9979864358901978}

{'text': '2. a) Describe the transfiguration of Jesus ay recorded in Luke 9:28 - 37, " (4mks)', 'label': 1, 'confidence': 0.9980291724205017}

{'text': 'b) Outline the instructions that Jesus gave the twelve disciples when he commissioned them', 'label': 1, 'confidence': 0.9940804839134216}

{'text': 'Luke 9:51 -9, (7mks)', 'label': 1, 'confidence': 0.9851856827735901}

{'text': 'e reasons why disciples are called today. (Smks)', 'label': 1, 'confidence': 0.9977411031723022}

{'text': 'ify areas of conflicts between Jesus and the Jewish leaders which eventually led fo (6mks)', 'label': 0, 'confidence': 0.8808253407478333}

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{'text': 'Significance of passion, death and resurrection of Jesus to Christians today. - the teaching of Jesus on the vine and braches, (7mks)', 'label': 1, 'confidence': 0.9972013235092163}

{'text': 'five ways in which the Holy spirit manifested himself on the day of Pentecost. [are the reasons why some Christians live in Christianity today, (8mks)', 'label': 1, 'confidence': 0.9972056746482849}

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{'text': 'NDNA Teun NANG aaa po aey EN c', 'label': 0, 'confidence': 0.9968400001525879}

{'text': 'Min: -TERMEN ERNMENT PAPER 2 iby Me "wc 'Gentity any two classifications of written sources of information on History and', 'label': 0, 'confidence': 0.9964354038238525}

{'text': 'Government. (2marks)', 'label': 1, 'confidence': 0.9946156144142151}

{'text': 'Give one social activity that was practiced by a man during the New Stone Age period, (1mark)', 'label': 1, 'confidence': 0.9939163327217102}

{'text': 'State two effects of the Land Enclosure System in Britain during the Agrarian', 'label': 1, 'confidence': 0.9866629242897034}

{'text': 'Revolution. . (2marks)', 'label': 1, 'confidence': 0.9928800463676453}

{'text': 'Highlight two negative effects of the trans-Saharan trade, (marks)', 'label': 1, 'confidence': 0.9967880249023438}

{'text': 'Name the first woman astronaut to travel into space. (1mark) 2', 'label': 1, 'confidence': 0.9976431727409363}

{'text': 'State two importance's of the radio as a form of communication. (2marks)', 'label': 1, 'confidence': 0.9981746673583984}

{'text': 'Give two ways how scientific inventions have negatively impacted on Agriculture. (2marks)', 'label': 1, 'confidence': 0.9983785152435303}

{'text': 'What was the title given to the highest political and religious leader of the Shona? (1mark)', 'label': 1, 'confidence': 0.990920901298523}

{'text': 'Identify one chartered company that was used by the Europeans to acquire colonies in', 'label': 1, 'confidence': 0.982282280921936}

{'text': 'Africa. (1marks)', 'label': 0, 'confidence': 0.7817497849464417}

{'text': 'State one way how the Lochner treaty benefited King Lewanika individually. (1mark)', 'label': 1, 'confidence': 0.9982842803001404}

{'text': '- Outline one social factor that led to the rise of Nationalism in Africa. (1marks)', 'label': 1, 'confidence': 0.9960685968399048}

{'text': '2. State one military alliance that was formed by European nations before the First World War. (1mark)', 'label': 1, 'confidence': 0.9975225329399109}

{'text': '- Name two permanent member states of the United Nations Security Council. (2marks)', 'label': 1, 'confidence': 0.9978893399238586}

{'text': 'State one way how the Cold War was witnessed in Africa. (1mark)', 'label': 1, 'confidence': 0.9960762858390808}

{'text': 'Name two military alliances which were formed during the cold war. (2marks)', 'label': 1, 'confidence': 0.9980260133743286}

{'text': '. Outline two reasons why United States of America did not join the First World War until 1917. (2marks)', 'label': 1, 'confidence': 0.9981210827827454}

{'text': 'Name the event that marked the end of Second World Wars. (1marks)', 'label': 1, 'confidence': 0.9922921061515808}

{'text': 'Question 5', 'label': 1, 'confidence': 0.7657755613327026}

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{'text': 'II) You deposit KES10, 000 at the beginning of every year for the next 10 years', 'label': 1, 'confidence': 0.9838098287582397}

{'text': 'Which plan would you go for and why given that the investment earns 7.5% semi-annually? {7 marks}', 'label': 1, 'confidence': 0.9967118501663208}

{'text': '(b) Table 3 shows the quantity and price of bread and butter produced in country Z between 2009 and 2013. le 3: Price and quantity of bread and butter produced in country z hat only be here applicable):', 'label': 1,

'confidence': 0.996501088142395}  
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 {'text': 'ECSE 1206 / ECIE 1206: Principles of Database Management Systems',  
 'label': 0, 'confidence': 0.9957818984985352}  
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 {'text': 'Question [.', 'label': 0, 'confidence': 0.9912917017936707}  
 {'text': 'Bis peptic Rb "examine the incomplete or inc ts involvement in st  
 ress" aflunce risk culture and capabilities in an organization. Provide  
 examples of recent yernance scenarios where the risk committee has played a  
 pivotal role in 0 bn ong! aren se < CeCctlve rs! k culture. temporary € hee',  
 'label': 0, 'confidence': 0.9792450666427612}  
 {'text': 'Lacy gues poser cay te sulatory expectatic', 'label': 0, 'confidence':  
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 {'text': 'Ha honeny hee | mentation. (6 Ma»'k ne', 'label': 0, 'confidence':  
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 {'text': 'Strathmore', 'label': 0, 'confidence': 0.9973676800727844}  
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{'text': 'DSA 8105: FUNDAMENTAL CONCEPTS IN FINANCE AND ECONOMICS 6 Setember2021 Time: 3 Hours ice cream market in Mombasa. \_ G Marks)', 'label': 1, 'confidence': 0.9594184160232544}

{'text': 'Briefly explain. (3 Marks)', 'label': 1, 'confidence': 0.9728115200996399}

{'text': '(3 Marks)', 'label': 0, 'confidence': 0.9587258696556091}

{'text': '(4 Marks)', 'label': 0, 'confidence': 0.9617224931716919}

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{'text': 'Time: 3 Hours estions and an appendix to one of the questions.', 'label': 0, 'confidence': 0.9960030913352966}

{'text': 'SSORY) and any other TWO questions. (3 Marks)', 'label': 0, 'confidence': 0.9415135383605957}

{'text': '| how it differs from the Newton-Raphson (3 Marks)', 'label': 1, 'confidence': 0.9968246221542358}

{'text': '7 le value of the root of the function  $f(x) =$ ', 'label': 1, 'confidence': 0.9922487735748291}

{'text': 'R code that you would use to solve this (6 Marks)', 'label': 1, 'confidence': 0.9950350522994995}

{'text': 'Me thematically) how you would generate  $f(0) = @exp - (0y)$ , and further numbers from this distribution. / 7 (8 Marks)', 'label': 1, 'confidence': 0.9961256384849548}

{'text': 'ye', 'label': 0, 'confidence': 0.9928303360939026}

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{'text': 'October, 2022 Time: 3 hours ----- / any', 'label': 0, 'confidence': 0.996061384677887}

{'text': 'Bi 80: million yards of cloth if it uses all of iagram to illustrate your answers to the 1] 1 be ae to produce? ie mark} yet heat i in Kisumu? (2 eS)', 'label': 1, 'confidence': 0.9978749752044678}

{'text': '[15 marks]', 'label': 0, 'confidence': 0.9707301259040833}

{'text': 'SECTION A: Attempt ALL questions in this section', 'label': 0, 'confidence': 0.9948166012763977}

{'text': 'QUESTION ONE a. State and explain THREE indirect modes of transmission of communicable diseases [3Mks] \_ Highlight THREE levels of prevention of communicable diseases [3Mks]', 'label': 1, 'confidence': 0.9912633895874023}

{'text': '(i) State FOUR importance of personal hygiene [4Mks]', 'label': 1, 'confidence': 0.9975041747093201}

{'text': '(ii) State and explain any FIVE ways by which alcohol use raises the risk of cancer [6Mks] d. (i) State FOUR importance of personal hygiene x [4Mks]', 'label': 1, 'confidence': 0.9978967905044556}

{'text': '(ii) State and explain any FIVE methods of Prevention and Control of

HIV/AIDS [10Mks]', 'label': 1, 'confidence': 0.9973564147949219}

{'text': 'SECTION B: Answer any TWO questions in this section', 'label': 0, 'confidence': 0.9954147338867188}

{'text': 'QUESTION TWO', 'label': 1, 'confidence': 0.8439317941665649}

{'text': '(a) State and explain any TEN factors that affect malaria transmission [10Mks]', 'label': 1, 'confidence': 0.9975938200950623}

{'text': '(b) Describe any FIVE malaria prevention and control strategies [10Mks]', 'label': 1, 'confidence': 0.9969991445541382}

{'text': 'QUESTION THREE', 'label': 0, 'confidence': 0.9972310662269592}

{'text': '(a) Giving examples for each, classify the SEX known addictive drugs and their mode of intake [10Mks]', 'label': 1, 'confidence': 0.9974384307861328}

{'text': '(b) State and explain FIVE ways by which alcohol decreases resistance to HIV', 'label': 1, 'confidence': 0.9974931478500366}

{'text': 'Infection [10Mks]', 'label': 0, 'confidence': 0.9549384117126465}

{'text': 'QUESTION FOUR', 'label': 1, 'confidence': 0.9855310916900635}

{'text': '(a) Describe FIVE Goals of Antiretroviral therapy in HIV/AIDS treatments [10Mks]', 'label': 1, 'confidence': 0.9970460534095764}

{'text': '(b) Discuss FIVE ways of positive living with HIV/AIDS [10Mks] lifestyle factors that contribute to many of such health problems? [10Mks]', 'label': 1, 'confidence': 0.9974862337112427}

{'text': 'Yo of deaths from lifestyle diseases occur in low- and middle-', 'label': 0, 'confidence': 0.9971543550491333}

{'text': 'Sion By ain this scenario using five reasons? [10Mks]', 'label': 0, 'confidence': 0.9952154159545898}

{'text': 'QUESTION ONE (30 MARKS)-COMPULSORY a). Explain the following programming tools used in program development:- \\. Language translators ii Unker ii. IDE iv. Loader (4 Marks)', 'label': 1, 'confidence': 0.997421383857727}

{'text': 'b). Explain the following System development life cycle stages in program development. (6 Marks)', 'label': 1, 'confidence': 0.9982669353485107}

{'text': 'i. Feasibility study ii. System investigation ili, System design', 'label': 1, 'confidence': 0.9625099301338196}

{'text': 'Cc). Differentiate between pseudo code and a flowchart. (2 Marks)', 'label': 1, 'confidence': 0.9975368976593018}

{'text': '(. Using a in a pseudo code and a flowchart, write a solution of a problem to calculate the area of a circle using the formula area = J) r°, where JI=3.14 and r is radius. (6 Marks)', 'label': 1, 'confidence': 0.998042106628418}

{'text': 'wr, a structured program that calculates the area of a circle using the formula area = r?, where J1=3.14', 'label': 1, 'confidence': 0.9955098628997803}

{'text': 'D andris rads. (6 Marks f). Differentiate between structured programming and modular programming. (4 Marks)', 'label': 1, 'confidence': 0.9945254325866699}

{'text': 'g). Outiine any two benefits of structured programming. (2 Marks)', 'label': 1, 'confidence': 0.9966707825660706}

{'text': 'in the following principles used in programming: (4 Marks)', 'label': 1, 'confidence': 0.9932188391685486}

```
{'text': '[in programming, giving an illustration using a flowchart for each. ia
(6 Marks)', 'label': 1, 'confidence': 0.9961452484130859}
{'text': 'QUESTION 1 [30 MARKS] COMPULSORY a) Explain the two types of functions
used in C program, giving an example of each. (4 Marks)', 'label': 1,
'confidence': 0.9974036812782288}
{'text': 'b) Write a program in C programming language that allows a user to
input a whole number of X in main program and uses two user defined functions
name, square() to compute the square of the number X and cube() to compute the
cube of X, then veer the X, result of the square and cube in the main program.
Use if() to select each subprogram at a time to execute. ; (10 Marks)', 'label':
1, 'confidence': 0.9978119134902954}
{'text': 'c) Explain the program structure of a C program, giving relevant
examples using the program in Q1 (b). (5 Marks)', 'label': 1, 'confidence':
0.9981735944747925}
{'text': 'd) Differentiate between an array, a record, a pointer and a file,
then write a C program that implements an array, a record and a file using a
structure (record) consisting of itemname and itemcode to store data of 20 items
in a retail shop computer and displays a list of the 20 items details reading
from file. Given that item name is a string of 25 characters, item code is a
number of 4 digits, record name is item, logical file is itemfile, and physical
file is "C:\\item\\itemf.dat'. (11 Marks)', 'label': 1, 'confidence':
0.9975709319114685}
{'text': 'QUESTION 2 [20 MARKS] a) Explain the three concepts used in structured
programming. (9 Marks)', 'label': 1, 'confidence': 0.9970837235450745}
{'text': 'b) Write a C program that that has three subprograms, first subprogram
to input a list of 18 customers names as string and ; deposit as number with
decimal point, second subprogram to compute sum of the deposit of all customers
and third ubprogram to display the list the 18 customers names and deposit, and
sum of deposits. (11 Marks)', 'label': 1, 'confidence': 0.9975050091743469}
{'text': 'sed in structured programming. (9 Marks)', 'label': 1, 'confidence':
0.9394962787628174}
{'text': '(0) , npute the area of acircle and to compute perimeter of a circle,
(11. Marks)', 'label': 1, 'confidence': 0.9969249367713928}
{'text': '(4 Marks)', 'label': 0, 'confidence': 0.9617224931716919}
{'text': '"Paul" and "John" respectively, Explain the following (8 marks)',
'label': 1, 'confidence': 0.9948443174362183}
{'text': '; name, idumber, and course and then (8 Marks)', 'label': 1,
'confidence': 0.9951602816581726}
{'text': '(5 Marks)', 'label': 0, 'confidence': 0.9632251858711243}
{'text': '(9 Marks)', 'label': 0, 'confidence': 0.9642064571380615}
{'text': '(6 Marks)', 'label': 0, 'confidence': 0.9636580944061279}
```

-----EXTRACTED QUESTIONS-----

(a) For each of the following scenarios, use a supply and demand diagram to illustrate the effect of a given shock on the equilibrium price and quantity u in the specified competitive market. Explain whether there is a shift in the

demand curve, the supply, or neither i) An unexpected temporary heat wave hits the South Coast. Show the effect in the ice cream market in Mombasa. (3 Marks)

ii) The government introduces a tax on ice cream which is paid by producers.

What is the effect in the ice cream market? (3 Marks)

(b) The price elasticity of demand  $-0.45$  in the long run. Why would the demand for crude oil be price in the short-run and (3 Marks)

elastic in the long run than in the short run? Briefly explain.

(c) Briefly explain why a supply shock leads to stagflation. (3 Marks)

(d) In the context of financial markets, distinguish between informational efficiency. (4 Marks)

Examine the importance of data quality in risk analytics, discuss the potential impact of incomplete or incorrect data on risk prediction models, and propose strategies for mitigating these issues. (4 marks)

. Analyze the 2 limitations of different machine learning algorithms (such as decision trees, neural networks, and support vector machines) in predicting credit default risk (4 marks)

Besides its involvement in stress testing, analyze three other ways that the risk committee is able to influence risk culture and capabilities in an organization. Provide examples of recent corporate governance scenarios where the risk committee has played a pivotal role in fostering an effective risk culture. (6 Marks)

Critically assess the benefits and criticisms of regulatory frameworks for banks and insurance companies. Use contemporary examples to illustrate your points and focus on the effects of recent changes in regulatory expectations, such as the increased focus on individual accountability and documentation. (8 marks)

"Risk identification forms the foundation of comprehensive risk management.

Given the evolution of risks in the modern global context, including technological, environmental, and geopolitical risks, traditional risk identification methods may need to be supplemented or rethought."

© 4-1) Identify seven reasons why man is considered' naa (emote . fall o! J ie Biblical apie? eee ay, (6 marks)

b) State six causes of sin from y. «) Wdentify ways in which Christian (7 marks) or in EgyPt strate his power in he hey were in the desert (8 marks)

rshipped God when tt faster (5 marks)

2a) Name seven plagues that God used to de b) Identify eigh ) Give the similarities between the Jewish Passover an t ways in which the Israelites wo! id Christians i (7 marks)

3 a) Give seven ways in which Elijah succeeded as a Prophet of God. 5) Outline the conditions that made it difficult for Prophet Elijah to stop idolatry 1" Israel (7 marks)

c) Identify six ways in which Christians enhance the true worship of God today (6 mark)

diay One y Par ofl Md ; . - 4a) Explain the | teachings of prophet Amos on Israel election. (7 marks)

b) State six ways in which God would punish Israel for her evils according to Amos. (6 marks)

Jessons Christians learn from Israel's election. (6 marks)

to handle cases of dishonesty. (8 marks)



(c) Give five reasons why Christians go to church of announced his

(b) Outline what Angel Gabriel revealed about John the Baptist when he (7mks)

2. (a) Explain the healing of the paralytic in Luke 5:18-26 7mks)

(b) List seven expectations of the Jews concerning the Messiah ( ° Ss

(6) In what ways are Christians preparing for th coming of the Messiah Gmks)

3: (c) Give six reasons that the Jewish leaders had to have Jesus arrested and even executed (6mks)

(b) State 8 extra-ordinary things that took place at the time of Jesus crucified/execution (8mks)

(c) State six problems that Christian today encounter while trying to practice their faith (6mks)

(b) Narrate peters message on the day of Pentecost (8mks)

(c) Give reasons why people abuse alcohol and other drugs today (Smks)

5. (a) State the role of the holy spirit as taught by Jesus (8mks)

(b) State Any Seven characteristics of Love (7mks)

(C) List any \$ gilts of the Holy Spirit (Smks)

6, (a) Explain the analogy of the People of God as used (0 express the unity of believers (7mks)

(b) What are the causes of disunity in the church today? (6mks)

(c) How is the unity believers expressed in the church today (7mks)

efine Constituti inswer All questions in this Section. 2. Identify ero pint Monarchy as a form of government. (1 mark)

A. Which is okccre ne where the remains of Kenyapitheeus were discovered in Kenya: (2 marks)

A. Stats two anette uence (mak rea me ities obtained from the Kenyan coast during the long distance trade, (2 marks)

2 Susceue iiae the government may limit one's freedom of movement in Kenya. (1 mark)

pee eS ae (2 marks)

Gent te et consent edn ye (1 mark)

Sts tro yes org eae exercised in Kenya. (2-marks)

40. Give aaa reaty which marked the colonial sphere of influence in East Africa in 1886. (1 mark)

|. Give two reasons why the British used indirect rule in some parts of Kens (2-marks)

Give two features of the political organizations which were formed in Kenya before 1939. (2 marks)

. Give one special court in Kenya. (1 mark)

| Beside unity, name the other pillar of Nyayoism. (1 mark)

\* |identify two education commissions in Kenya since independence. (2:marks)

State two types of government expenditure in Kenya. (@ marks)

"Answer Any three questions in this Section. ofthe Luo from their original homeland into Kenya. (5 marks)

18. a) Give five reasons for the migration 'Tthe Somali in Kenya during the pre-colonial period. (10 marks)

b) Describe the political organization o (3 marks)

19, a) State three factors which enabled the Arabs 10 sail from Oman to the Kenyan Coast. (12 marks)

b) Explain six effects of long distance trade on the people of Kenya 20. a) State five terms of the Devonshire White Paper of 1923. (5 marks)

b) Explain five problems faced by Africans in Urban Centres during the colonial period. (10 marks)

21. a) Give five features of African Socialism in Kenya. (5 marks)

Industrialization in Kenya since independence. (10marks)

b) Explain five factors that have influenced industrialization in Kenya since independence. (10marks)

Answer Any Two questions from this section. Person should meet to qualify to be a citizen by birth in Kenya. 6 marks)

22. a) Give three conditions a person should meet to qualify to be a citizen by birth in Kenya. 6 marks)

b) Explain five factors that have influenced industrialization in Kenya since independence. (10marks)

23. a) Outline the composition of the County Executive Committee, 6 marks)

b) Describe the law making process at the National level in Kenya. (12 marks)

24. a) State five objectives of Devolution. b) Explain five ways in which the government of Kenya ensures effective utilization of public funds. (10 marks)

Examine the importance of data quality in risk analytics, discuss the potential impact of incomplete or incorrect data on risk prediction models, and propose strategies for mitigating these issues. (4 marks)

1. Analyze the 2 limitations of different machine learning algorithms (such as decision trees, neural networks, and support vector machines) in predicting credit default risk (4 marks)

Besides its involvement in stress testing, analyze three other ways that the risk committee is able to influence risk culture and capabilities in an organization. Provide examples of recent corporate governance scenarios where the risk committee has played a pivotal role in fostering an effective risk culture. (6 Marks)

Critically assess the benefits and criticisms of regulatory frameworks for banks and insurance companies. Use contemporary examples to illustrate your points and focus on the effects of recent changes in regulatory expectations, such as the increased focus on individual accountability and documentation. (8 marks)

"Risk identification forms the foundation of comprehensive risk management. Given the evolution of risks in the modern global context, including technological, environmental, and geopolitical risks, traditional risk identification methods may need to be supplemented or rethought."

(a) For each of the following scenarios, use a supply and demand diagram to illustrate the effect of a given shock on the equilibrium price and quantity in the specified competitive market. Explain whether there is a shift in the demand curve, the supply, or neither i) An unexpected temporary heat wave hits the South Coast. Show the effect in the ice cream market in Mombasa. (3 Marks)

ii) The government introduces a tax on ice cream which is paid by producers. What is the effect in the ice cream market? (3 Marks)

(b) The price elasticity of demand is -0.45 in the long run. Why would the demand for crude oil be more elastic in the short-run and more inelastic in the long run than in the short run? Briefly explain.

(c) Briefly explain why a supply shock leads to stagflation. (3 Marks)

(d) In the context of financial markets, distinguish between informational efficiency and market efficiency. (4 Marks)

Question 1

(a) Suppose Kisumu can produce 120 million bushels of wheat if it uses all of its productive resources in the wheat industry, or 80 million yards of cloth if it uses all of its resources in the cloth industry. Use a diagram to illustrate your answers to the following questions. Label the diagram and explain in words.

(i) Assuming constant opportunity costs, draw Kisumu's production-possibility curve.

(Place wheat on the x-axis) {2 marks}

(ii) Suppose Kisumu's consumers choose to consume 70 million bushels of wheat. How much cloth will Kisumu then be able to produce? {2 marks}

(iii) What is the true price of a bushel of wheat in Kisumu? (2 marks)

(iv) Can Kisumu produce 60 million bushels of wheat and 50 million yards of cloth?

If so why? {2 marks}

(b) If you buy 100 shares of East African Breweries stock

(i) To what are you entitled? {3 marks}

(ii) What is the most money you can make on this investment over the next year? {2 marks}

(iii) If you paid KES180 per share, what is the most money you could lose over the year? {2 marks} [15 marks]

ME. |> OlCa Ss ign eauite 6.19. P.O. siete AR r. ANSWER ALL Got aaa (ene + a) Relate ¶| at re message of Peter on the Day of Pentecost. (10 Marks)

b) In what ways is the coming of the Holy Spirit transform the life of Peter on the Day of Pentecost? (5 Marks)

c) What activities of the church in Kenya show that the Holy Spirit is working among them? (5 Marks)

2a) From the teachings of Jesus, what role would the Holy Spirit play? (8 Marks)

b) Describe the fruits of the Holy Spirit according to Galatians 5:22-26. (6 Marks)

c) In what ways do Christians demonstrate the fruit of generosity? (6 Marks)

3a) Explain how the unity of believers is expressed in the symbol of the body of Christ. (7 Marks)

b) State teachings of Peter concerning the people of God. (1\* Peter 2:9- 10) (7 Marks)

c) How do churches discipline those who cause disunity in the church today? (6 Marks)

a) According to Isaiah's prophecy state the names given to the Messiah, and b) How did Jesus fulfill Isaiah's prophecy of the suffering servant? c) How should Christians respond to those who are opposing them? (8 marks)

a) Outline the role of John the Baptist. (7 marks)

b) State the lessons that Christians learn from the annunciation of the birth of John the Baptist. (7:marks)

c) State the reasons: why Jesus was baptized yet he was sinless. (6 marks)

or a) Narrate the transfiguration of Jesus. (8 marks)

b) List the occasions when Jesus was tempted. (6 marks)

c) Outline the reasons why Christians should repent their sins. (6 marks)

4, S a) Describe the parable of the Sower. (8 mks)  
b) Why did Jesus use parables in his teachings: (6 mks)  
¢) Outline the lessons that Christians learn from the above parable. (6mks)  
S . a) List the fruits of the Holy Spirit as taught by St. Paul (7 mks)  
b) Describe the events that took place on the day of pentacost (7 mks)  
¢) Describe how the unity of believers is expressed in the image of the vine and the branches.(John 15: 1-10) (7 mks)  
Kenya take care of the environment ( (8 mks)  
a) Describe the call of Abraham. mks)  
b) Explain the characteristics of a covenant. eras)  
¢) Identify seven examples of covenants made in Kenya today (7m 3. a) Give five reasons why Israelites demanded for a king. (5 mks)  
b) What lessons can modern political leaders learn from king David. (8 mks)  
¢) How do Christians in Kenya demonstrate their faith in God? (7 mks)  
4. a) State four differences between traditional African prophets and the Old Testament prophets. 5: (8 mks)  
b) Outline the social injustices condemned by prophet Amos in Israel.  
In what ways is the church in Kenya promoting justice in society? (6 mks)  
Re, a) With reference to the teaching of prophet Jeremiah on judgement , State six ways in which God would punish the people of Judah. (6 mks)  
b) In what ways did prophet Jeremiah suffer while carrying out his work in Judah. (6 mks)  
c) List eight moral values that Christians can acquire from the life of prophet Jeremiah. (8 mks)  
6. a) List eight places used for worship in Traditional African communities. (8 mks)  
b) Give six reasons why sacrifices were made in Traditional African communities. (6 mks)  
c) How do Christians in Kenya show respect for places of worship? (6 mks)  
STRU IONS, : 1. State the Jewish expectation concerning the Messiah, (6mks)  
b) Describe the events that were associated with the birth of John the Baptist, (6mks)  
©) Give reasons why the birth of a child is celebrated in modern society, (6mks)  
2. a) Describe the transfiguration of Jesus as recorded in Luke 9:28 - 37, " (4mks)  
b) Outline the instructions that Jesus gave the twelve disciples when he commissioned them  
Luke 9:51 -9, (7mks)  
e reasons why disciples are called today. (5mks)  
(were the reactions of the people who witnessed Jesus crucifixion, (7mks)  
Significance of passion, death and resurrection of Jesus to Christians today. - the teaching of Jesus on the vine and branches, (7mks)  
five ways in which the Holy spirit manifested himself on the day of Pentecost. [are the reasons why some Christians live in Christianity today, (8mks)  
causes of conflict between parents and children in the contemporary society? (6mks)  
Government. (2marks)  
Give one social activity that was practiced by a man during the New Stone Age

period, (1mark)

State two effects of the Land Enclosure System in Britain during the Agrarian Revolution. . (2marks)

Highlight two negative effects of the trans-Saharan trade, (marks)

Name the first woman astronaut to travel into space. (1mark) 2

State two importance's of the radio as a form of communication. (2marks)

Give two ways how scientific inventions have negatively impacted on Agriculture. (2marks)

What was the title given to the highest political and religious leader of the Shona? (1mark)

Identify one chartered company that was used by the Europeans to acquire colonies in

State one way how the Lochner treaty benefited King Lewanika individually. (1mark)

- Outline one social factor that led to the rise of Nationalism in Africa. (1marks)

2. State one military alliance that was formed by European nations before the First World War. (1mark)

- Name two permanent member states of the United Nations Security Council. (2marks)

State one way how the Cold War was witnessed in Africa. (1mark)

Name two military alliances which were formed during the cold war. (2marks)

. Outline two reasons why United States of America did not join the First World War until 1917. (2marks)

Name the event that marked the end of Second World Wars. (1marks)

Question 5

(a) Suppose that you have the following investment plans 1) You deposit KES10,000 every end of the year for next 10 years

II) You deposit KES10,000 at the beginning of every year for the next 10 years

Which plan would you go for and why given that the investment earns 7.5% semi-annually? {7 marks}

(b) Table 3 shows the quantity and price of bread and butter produced in country Z between 2009 and 2013. Table 3: Price and quantity of bread and butter produced in country Z that only be here applicable):

GDP {2 marks} marks} j [15 marks]

DSA 8105: FUNDAMENTAL CONCEPTS IN FINANCE AND ECONOMICS 6 September 2021 Time: 3 Hours ice cream market in Mombasa. \_ G Marks)

Briefly explain. (3 Marks)

| how it differs from the Newton-Raphson (3 Marks)

7 the value of the root of the function  $f(x) =$

R code that you would use to solve this (6 Marks)

Me thematically) how you would generate  $f(0) = \exp - (0y)$ , and further numbers from this distribution. / 7 (8 Marks)

Bi 80: million yards of cloth if it uses all of diagram to illustrate your answers to the 1] 1 be able to produce? 1 mark} yet heat i in Kisumu? (2 es)

QUESTION ONE a. State and explain THREE indirect modes of transmission of communicable diseases [3Mks] \_ Highlight THREE levels of prevention of communicable diseases [3Mks]

- (i) State FOUR importance of personal hygiene [4Mks]
- (ii) State and explain any FIVE ways by which alcohol use raises the risk of cancer [6Mks]
- d. (i) State FOUR importance of personal hygiene x [4Mks]
- (ii) State and explain any FIVE methods of Prevention and Control of HIV/AIDS [10Mks]

#### QUESTION TWO

- (a) State and explain any TEN factors that affect malaria transmission [10Mks]
- (b) Describe any FIVE malaria prevention and control strategies [10Mks]
- (a) Giving examples for each, classify the SEX known addictive drugs and their mode of intake [10Mks]

- (b) State and explain FIVE ways by which alcohol decreases resistance to HIV
- #### QUESTION FOUR

- (a) Describe FIVE Goals of Antiretroviral therapy in HIV/AIDS treatments [10Mks]
- (b) Discuss FIVE ways of positive living with HIV/AIDS [10Mks] lifestyle factors that contribute to many of such health problems? [10Mks]

QUESTION ONE (30 MARKS)-COMPULSORY a). Explain the following programming tools used in program development:- \. Language translators ii Unker ii. IDE iv. Loader (4 Marks)

b). Explain the following System development life cycle stages in program development. (6 Marks)

- i. Feasibility study ii. System investigation ili, System design
- Cc). Differentiate between pseudo code and a flowchart. (2 Marks)

(. Using a in a pseudo code and a flowchart, write a solution of a problem to calculate the area of a circle using the formula area =  $J) r^{\circ}$ , where  $JI=3.14$  and  $r$  is radius. (6 Marks)

wr, a structured program that calculates the area of a circle using the formula area =  $r?$ , where  $J1=3.14$

D andris rads. (6 Marks f). Differentiate between structured programming and modular programming. (4 Marks)

g). Outiine any two benefits of structured programming. (2 Marks)

in the following principles used in programming: (4 Marks)

[in programming, giving an illustration using a flowchart for each. ia (6 Marks)

QUESTION 1 [30 MARKS] COMPULSORY a) Explain the two types of functions used in C program, giving an example of each. (4 Marks)

b) Write a program in C programming language that allows a user to input a whole number of X in main program and uses two user defined functions name, square() to compute the square of the number X and cube() to compute the cube of X, then veer the X, result of the square and cube in the main program. Use if() to select each subprogram at a time to execute. ; (10 Marks)

c) Explain the program structure of a C program, giving relevant examples using the program in Q1 (b). (5 Marks)

d) Differentiate between an array, a record, a pointer and a file, then write a C program that implements an array, a record and a file using a structure (record) consisting of itemname and itemcode to store data of 20 items in a retail shop computer and displays a list of the 20 items details reading from file. Given that item name is a string of 25 characters, item code is a number of 4 digits, record name is item, logical file is itemfile, and physical file is "C:\item\itemf.dat'. (11 Marks)

QUESTION 2 [20 MARKS] a) Explain the three concepts used in structured programming. (9 Marks)

b) Write a C program that has three subprograms, first subprogram to input a list of 18 customers names as string and ; deposit as number with decimal point, second subprogram to compute sum of the deposit of all customers and third subprogram to display the list the 18 customers names and deposit, and sum of deposits. (11 Marks)

sed in structured programming. (9 Marks)

(0) , npute the area of acircle and to compute perimeter of a circle, (11. Marks)

"Paul" and "John" respectively, Explain the following (8 marks)

; name, idumber, and course and then (8 Marks)

----- 204 questions, extracted from 346 lines -----

### 0.0.9 Step 6 : Model Comparison and Selection

#### Comparison Visual:

- **BERT:** Exceptional with 99% accuracy and precision, indicating nearly perfect performance for this task.
- **SVM (Support Vector Machine):** Highly effective, showing 98% in both accuracy and precision, indicating strong reliability.
- **XGBoost:** Also performs robustly with 98% accuracy and precision, demonstrating excellent predictive power.
- **Decision Trees:** Reliable with 97% accuracy and a slightly higher precision of 98%, showing good but slightly inconsistent performance.
- **Deep Learning:** Consistent performance with 97% in both accuracy and precision, demonstrating strong capabilities in handling complex patterns.
- **Linear Regression:** Slightly lower performance at 96% for both metrics, indicating it may struggle with more complex or noisy data.

The models listed range in accuracy and precision from 96% to 99%, highlighting generally high performance across various approaches. BERT and SVM lead the pack with nearly flawless scores, suggesting they are particularly well-suited for tasks demanding high reliability and precision such as this one.

Among these, BERT stands out as the best modern approach, excelling with top scores and the added advantage of requiring no feature extraction, simplifying its implementation and making it adaptable to a wide range of applications. SVM is the premier choice among traditional machine learning models, showcasing its robustness and efficiency.

If one model must be selected for deployment,

BERT would be the optimal choice due to its superior performance, versatility, and ease of use, making it ideally suited for the task at hand.

### 0.0.10 Step 6 : Model Deployment - DONE

The BERT Model for question extraction has been succesfully deployed as a streamlit application, which can be accessed from this link:

<https://bertex.streamlit.app/>

The models, functionality, datasets and jupyternotebook can also be accessed/downloaded from there.