

ARTIFICIAL INTELLIGENCE DATA TECHNICIAN



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ASSESSMENT PACKAGE
National Vocational Certificate Level 2

Version 1 - November, 2019

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Document Version

November, 2019
Islamabad, Pakistan

ARTIFICIAL INTELLIGENCE DATA TECHNICIAN



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ASSESSMENT PACKAGE
National Vocational Certificate Level 2

Version 1 - November, 2019

Self-Assessment Checklist

| | |
|-----------------------------|--|
| Candidate Name | |
| Registration No. | |
| Qualification | National Vocational Certificate Level 2 - Artificial Intelligence Data Technician |
| Competency Standards | 061900925 Use of Spreadsheet |
| Assessment Task | <p>Use the given dataset (see Annexure A) to do the following tasks:</p> <ul style="list-style-type: none"> • Make a new column with calculating the total number of goals from column Home Team Goals and Away Team Goals. • Find the percentage of Away Team Goals w.r.t total number of goals. • Sort the Percentages of Away Team Goals descending wise • Remove all the rows of matches played in La Rosaleda • Delete the column DateTime of Match. • Make a pivot table of average number of goals per City. • Plot the average number of goals w.r.t Year |

I can.....

| Performance Criteria | Yes | No |
|---|--------------------------|--------------------------|
| 1. Format cells as required | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Insert data in multiple cells | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Edit data in multiple cells | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Delete data in multiple cells | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Copy data from specified cells | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Paste data into specified cells | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Move data to or from specified cells | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Merge multiple cells | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Unmerge multiple cells | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Hide specified row(s) | <input type="checkbox"/> | <input type="checkbox"/> |

| | | |
|---|----------------------|----------------------|
| 11. Unhide row(s) | <input type="text"/> | <input type="text"/> |
| 12. Hide specified columns(s) | <input type="text"/> | <input type="text"/> |
| 13. Unhide column(s) | <input type="text"/> | <input type="text"/> |
| 14. Insert column at desired location in a worksheet | <input type="text"/> | <input type="text"/> |
| 15. Delete specified row(s) | <input type="text"/> | <input type="text"/> |
| 16. Insert column at desired location | <input type="text"/> | <input type="text"/> |
| 17. Delete specified column(s) | <input type="text"/> | <input type="text"/> |
| 18. Apply cell referencing | <input type="text"/> | <input type="text"/> |
| 19. Import data from external source | <input type="text"/> | <input type="text"/> |
| 20. Sort data in ascending order | <input type="text"/> | <input type="text"/> |
| 21. Sort data in descending order | <input type="text"/> | <input type="text"/> |
| 22. Apply single level filter | <input type="text"/> | <input type="text"/> |
| 23. Apply multi-level filter | <input type="text"/> | <input type="text"/> |
| 24. Create different types of data series | <input type="text"/> | <input type="text"/> |
| 25. Apply arithmetic formula | <input type="text"/> | <input type="text"/> |
| 26. Apply concatenation formula | <input type="text"/> | <input type="text"/> |
| 27. Calculate string length using formula | <input type="text"/> | <input type="text"/> |
| 28. Select desired part of string using formula | <input type="text"/> | <input type="text"/> |
| 29. Copy formula using different cell referencing | <input type="text"/> | <input type="text"/> |
| 30. Use Look-up function | <input type="text"/> | <input type="text"/> |
| 31. Use Count Formula | <input type="text"/> | <input type="text"/> |
| 32. Use Find formula | <input type="text"/> | <input type="text"/> |
| 33. Take data sum, sub, max, min, variance, mean, median, average, round, using formula | <input type="text"/> | <input type="text"/> |
| 34. Take count of entities using formula | <input type="text"/> | <input type="text"/> |
| 35. Take count of blanks using formula | <input type="text"/> | <input type="text"/> |
| 36. Calculate minimum of entities using formula | <input type="text"/> | <input type="text"/> |

| | | |
|---|----------------------|----------------------|
| 37. Calculate maximum of entities using formula | <input type="text"/> | <input type="text"/> |
| 38. Select entity based on condition | <input type="text"/> | <input type="text"/> |
| 39. Arrange data in an appropriate format | <input type="text"/> | <input type="text"/> |
| 40. Apply pivot table operation | <input type="text"/> | <input type="text"/> |
| 41. Specify data to plot | <input type="text"/> | <input type="text"/> |
| 42. Specify chart type | <input type="text"/> | <input type="text"/> |
| 43. Format Chart | <input type="text"/> | <input type="text"/> |
| 44. Apply designs to chart | <input type="text"/> | <input type="text"/> |

Candidate's Signature: Assessor's Signature:

.....

Date:

Instruction Sheet for the Candidate

| | | | |
|--|------------------------------------|---------------|---------------------------|
| Title of Qualification: National Vocational Certificate Level 2 – Artificial Intelligence Data Technician | CS Code: | Level: | Version: 02 |
| Competency Standard Title: <ul style="list-style-type: none"> Use of Spreadsheet | Assessment Date (DD/MM/YY): | | |

| | |
|----------------------------------|--|
| Candidate Details | Name: Registration/Roll Number: |
| Guidance for Candidate | <p>To meet this standard, you are required to complete the following within the given time frame (for practical demonstration & assessment):</p> <p>Use the given dataset (see Annexure A) to do the following tasks:</p> <ul style="list-style-type: none"> Make a new column with calculating the total number of goals from column Home Team Goals and Away Team Goals. Find the percentage of Away Team Goals w.r.t total number of goals. Sort the Percentages of Away Team Goals descending wise Remove all the rows of matches played in La Rosaleda Delete the column DateTime of Match. Make a pivot table of average number of goals per City. Plot the average number of goals w.r.t Year |
| Time: 120 min | During a practical assessment, under observation by an assessor, you are required to perform above task by demonstrating the following criteria: |
| Minimum Evidence Required | <ol style="list-style-type: none"> 1. Format cells as required 2. Insert data in multiple cells 3. Edit data in multiple cells 4. Delete data in multiple cells 5. Copy data from specified cells 6. Paste data into specified cells 7. Move data to or from specified cells 8. Merge multiple cells 9. Unmerge multiple cells 10. Hide specified row(s) 11. Unhide row(s) 12. Hide specified columns(s) 13. Unhide column(s) 14. Insert column at desired location in a worksheet 15. Delete specified row(s) 16. Insert column at desired location 17. Delete specified column(s) |

| | |
|--|---|
| | <ul style="list-style-type: none"> 18. Apply cell referencing 19. Import data from external source 20. Sort data in ascending order 21. Sort data in descending order 22. Apply single level filter 23. Apply multi-level filter 24. Create different types of data series 25. Apply arithmetic formula 26. Apply concatenation formula 27. Calculate string length using formula 28. Select desired part of string using formula 29. Copy formula using different cell referencing 30. Use Look-up function 31. Use Count Formula 32. Use Find formula 33. Take data sum, sub, max, min, variance, mean, median, average, round, using formula 34. Take count of entities using formula 35. Take count of blanks using formula 36. Calculate minimum of entities using formula 37. Calculate maximum of entities using formula 38. Select entity based on condition 39. Arrange data in an appropriate format 40. Apply pivot table operation 41. Specify data to plot 42. Specify chart type 43. Format Chart 44. Apply designs to chart |
|--|---|

Assessors Judgment Guide (to be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

| | |
|------------------------|--|
| Qualification | National Vocational Certificate Level 02 - Artificial Intelligence Data Technician |
| Competency Standard(s) | 1. Use of Spreadsheet |
| Candidate Details | Name: Registration/Roll Number: Candidate Signature: |
| Assessment Outcome | <p>COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/></p> <p>Name of the Assessor:..... Assessor's code:</p> <p>Signature of the Assessor:.....</p> |

| Assessment Summary (to be filled by the assessor) | | | | | | | |
|---|---------|------|-------------|-----------|-----------|-----------|-------------------|
| Activity | Method | | | | | Result | |
| Nature of Activity | Written | Oral | Observation | Portfolio | Role Play | Competent | Not Yet Competent |
| Practical Skill Demonstration | | | ✓ | | | | |
| Knowledge Assessment | | ✓ | | | | | |
| Other Requirement | | | | | | | |

Observation Checklist

| Assessment Task | | Description of assessment | | |
|--|--|---|----|---------|
| Assessment Task | | Use the given dataset (see Annexure A) to do the following tasks: <ul style="list-style-type: none"> • Make a new column with calculating the total number of goals from column Home Team Goals and Away Team Goals. • Find the percentage of Away Team Goals w.r.t total number of goals. • Sort the Percentages of Away Team Goals descending wise • Remove all the rows of matches played in La Rosaleda • Delete the column DateTime of Match. • Make a pivot table of average number of goals per City. • Plot the average number of goals w.r.t Year | | |
| During the practical assessment, candidate demonstrated the following: | | Yes | No | Remarks |
| 1. | Format cells as required | | | |
| 2. | Insert data in multiple cells | | | |
| 3. | Edit data in multiple cells | | | |
| 4. | Delete data in multiple cells | | | |
| 5. | Copy data from specified cells | | | |
| 6. | Paste data into specified cells | | | |
| 7. | Move data to or from specified cells | | | |
| 8. | Merge multiple cells | | | |
| 9. | Unmerge multiple cells | | | |
| 10. | Hide specified row(s) | | | |
| 11. | Unhide row(s) | | | |
| 12. | Hide specified columns(s) | | | |
| 13. | Unhide column(s) | | | |
| 14. | Insert column at desired location in a worksheet | | | |
| 15. | Delete specified row(s) | | | |
| 16. | Insert column at desired location | | | |
| 17. | Delete specified column(s) | | | |

| | | | | |
|-----|---|--|--|--|
| 18. | Apply cell referencing | | | |
| 19. | Import data from external source | | | |
| 20. | Sort data in ascending order | | | |
| 21. | Sort data in descending order | | | |
| 22. | Apply single level filter | | | |
| 23. | Apply multi-level filter | | | |
| 24. | Create different types of data series | | | |
| 25. | Apply arithmetic formula | | | |
| 26. | Apply concatenation formula | | | |
| 27. | Calculate string length using formula | | | |
| 28. | Select desired part of string using formula | | | |
| 29. | Copy formula using different cell referencing | | | |
| 30. | Use Look-up function | | | |
| | Use Count Formula | | | |
| 31. | Use Find formula | | | |
| 32. | Take data sum, sub, max, min, variance, mean, median, average, round, using formula | | | |
| 33. | Take count of entities using formula | | | |
| 34. | Take count of blanks using formula | | | |
| 35. | Calculate minimum of entities using formula | | | |
| 36. | Calculate maximum of entities using formula | | | |
| 37. | Select entity based on condition | | | |
| 38. | Arrange data in an appropriate format | | | |
| 39. | Apply pivot table operation | | | |
| 40. | Specify data to plot | | | |
| 41. | Specify chart type | | | |

| | | | | |
|------------------------------------|--------------------------|--|--|--|
| 42. | Format Chart | | | |
| 43. | Apply designs to chart | | | |
| 44. | Format cells as required | | | |
| Competent <input type="checkbox"/> | | Not Yet Competent <input type="checkbox"/> | | |

| Feedback to the Candidate | | |
|---|-------------------|--|
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| In terms of complete competency, the candidate was found: | Competent | |
| | Not Yet Competent | |
| Candidate's Signature:Assessor's Signature: | | |

Test Yourself (Multiple Choice Questions)

M 1
C
D
U
L
E

Q 1
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Which one of the following options is used to cut the text in spreadsheet

A Ctrl+x

B Ctrl+v

C Ctrl+w

D Ctrl+s

Q 2
u
e
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i
o
n

Which function tells how many numeric entries there in a cell are?

A Num

B Count

C Sum

D Chknum

Q 3
u
e
s
t
i
o
n

The process of arranging the items of a column in some sequence or order is known as:

A Arranging

B Auto Filling

C Sorting

D Filtering

Q 4
u
e
s
t
i
o
n

How can you remove borders applied in a cell?

- A Choose None on Border tab of Format cells
- B Open the list on Border tool in Formatting toolbar then choose first tool (no border)
- C Both of above
- D None of above

Q 5
u
e
s
t
i
o
n

Which of the following commands will you use to convert the column of data into row?

- A Cut and Paste
- B Edit >> Paste Special >> Transpose
- C Both of above
- D None of above

Q 6
u
e
s
t
i
o
n

What would be the result of following command?
Edit >> Delete Command

- A Deletes the content of a cell
- B Deletes the format of cell
- C Deletes the comment of cell
- D Deletes selected cells

Q 7
u
e
s
t
i
o
n

The process of getting data from a cell located in a different sheet is called as?

- A Accessing
- B Referencing
- C Updating
- D Functioning

Q 8
u
e
s
t
i
o
n

How would you rearrange the data in ascending/descending order?

- A Data, Sort
- B Data, Form
- C Data, Table
- D Data Subtotals

Q 9
u
e
s
t
i
o
n

Merge cells option can be applied from

- A Format Cells dialog box Alignment Tab
- B Formatting toolbar
- C Both of above
- D None of above

Q 10
u
e
s
t
i
o
n

While Formatting a cell in Currency, you can specify

A Decimal Places

B Currency Symbol

C Percentage Symbol

D None of above

Answers Key

1. A
2. B
3. C
4. C
5. B
6. D
7. B
8. A
9. A
10. B

ANNEXURE-A

Following Dataset can be copied in the spreadsheet to provide a student for Assessment:

| Year | Datetime of Match | Stage | Stadium | City | Home Team Name | Home Team Goals | Away Team Goals | Away Team Name |
|------|---------------------|---------|--|--------------|----------------|-----------------|-----------------|------------------|
| 1982 | 13 Jun 1982 - 20:00 | Group 3 | Camp Nou Estadio | Barcelona | Argentina | 0 | 1 | Belgium |
| 1982 | 14 Jun 1982 - 17:15 | Group 1 | Municipal de Balaïç ½dos Ramon Sanchez Pizjuan | Vigo | Italy | 0 | 0 | Poland |
| 1982 | 14 Jun 1982 - 21:00 | Group 6 | Sanchez Pizjuan | Seville | Brazil | 2 | 1 | Soviet Union |
| 1982 | 15 Jun 1982 - 17:15 | Group 1 | Riazor | La Coruña ½A | Peru | 0 | 0 | Cameroon |
| 1982 | 15 Jun 1982 - 21:00 | Group 3 | Nuevo Estadio | Elche | Hungary | 10 | 1 | El Salvador |
| 1982 | 15 Jun 1982 - 21:00 | Group 6 | La Rosaleda | Malaga | Scotland | 5 | 2 | New Zealand |
| 1982 | 16 Jun 1982 - 17:15 | Group 2 | El Molinon | Gijon | Germany FR | 1 | 2 | Algeria |
| 1982 | 16 Jun 1982 - 17:15 | Group 4 | San Mames | Bilbao | England | 3 | 1 | France |
| 1982 | 16 Jun 1982 - 21:00 | Group 5 | Luis Casanova | Valencia | Spain | 1 | 1 | Honduras |
| 1982 | 17 Jun 1982 - 17:15 | Group 2 | Carlos Tartiere | Oviedo | Chile | 0 | 1 | Austria |
| 1982 | 17 Jun 1982 - 17:45 | Group 4 | Jose Zorrilla | Valladolid | Czechoslovakia | 1 | 1 | Kuwait |
| 1982 | 17 Jun 1982 - 21:00 | Group 5 | La Romareda Estadio | Zaragoza | Yugoslavia | 0 | 0 | Northern Ireland |
| 1982 | 18 Jun 1982 - 17:15 | Group 1 | Municipal de Balaïç ½dos | Vigo | Italy | 1 | 1 | Peru |
| 1982 | 18 Jun 1982 - 21:00 | Group 3 | Jose Rico Perez | Alicante | Argentina | 4 | 1 | Hungary |

| | | | | | | | | |
|------|---------------------------|------------|----------------------|--------------|--------------|---|---|----------------|
| 1982 | 18 Jun 1982 - 21:00 | Group 6 | Benito Villamarin | Seville | Brazil | 4 | 1 | Scotland |
| 1982 | 19 Jun 1982 - 19:15 | Group 1 | Riazor | La Coruña | Poland | 0 | 0 | Cameroon |
| 1982 | 19 Jun 1982 - 21:00 | Group 3 | Nuevo Estadio | Elche | Belgium | 1 | 0 | El Salvador |
| 1982 | 19 Jun 1982 - 21:00 | Group 6 | La Rosaleda | Malaga | Soviet Union | 3 | 0 | New Zealand |
| 1982 | 20 Jun 1982 - 17:15 | Group 2 | El Molinon | Gijon | Germany FR | 4 | 1 | Chile |

Self-Assessment Checklist

| | |
|-----------------------------|---|
| Candidate Name | |
| Registration No. | |
| Qualification | National Vocational Certificate Level 2 - Artificial Intelligence Data Technician |
| Competency Standards | 061900926 Use Multimedia Processing |
| Assessment Task | <p>Download or record two videos then perform following tasks:</p> <ul style="list-style-type: none"> • Save them in MP4 format with resolutions of 720p minimum • Crop both into half and merge both videos with resolution 480p pixels minimum • Extract the frame containing text from video • Save them in JPGE format with resolutions of 1024 x 768 pixels' minimum • Merge both images with resolution 640 x 480 pixels' minimum • Run OCR and extract the text from image • Extract audios tracks from video and save them in mp3 format • Change bite rate to 64 kps • Reduce noise if any in audio files |

I can.....

| Performance Criteria | Yes | No |
|---|--------------------------|--------------------------|
| 1. Convert image into specified format using suitable tools | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Change resolution to the specified requirements | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Crop the image to remove unwanted artifacts using suitable tools | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Merge multiple images using suitable tools | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Overlay text using suitable tools | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Resize the image to specified size using suitable tools | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Adjust image orientation to specified requirement using suitable tools | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Prepare text based images for OCR (optical character recognition) using suitable tools | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Convert video into specified format using suitable tools | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Change resolution of the video to the specified requirements using suitable tools | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. Crop the video to remove unwanted duration using suitable tools | <input type="checkbox"/> | <input type="checkbox"/> |

| | | | |
|-----|---|----------------------|----------------------|
| 12. | Crop the video to remove unwanted contents using suitable tools | <input type="text"/> | <input type="text"/> |
| 13. | Merge multiple videos using suitable tools | <input type="text"/> | <input type="text"/> |
| 14. | Adjust frame rate of video | <input type="text"/> | <input type="text"/> |
| 15. | Extract frames from video to save them in image format | <input type="text"/> | <input type="text"/> |
| 16. | Modify audio tracks of video using suitable tools | <input type="text"/> | <input type="text"/> |
| 17. | Insert identifier in a video | <input type="text"/> | <input type="text"/> |
| 18. | Convert audio into specified format using suitable tools | <input type="text"/> | <input type="text"/> |
| 19. | Adjust bit rate of audio using suitable tools | <input type="text"/> | <input type="text"/> |
| 20. | Reduce noise from audio using suitable tools | <input type="text"/> | <input type="text"/> |
| 21. | Enhance audio for pre processing | <input type="text"/> | <input type="text"/> |

Candidate's Signature: Assessor's Signature:

.....

Date:

Instruction Sheet for the Candidate

| | | | |
|--|------------------------------------|---------------|---------------------------|
| Title of Qualification: National Vocational Certificate Level 2 – Artificial Intelligence Data Technician | CS Code: | Level: | Version: 02 |
| Competency Standard Title: <ul style="list-style-type: none"> Use Multimedia Processing | Assessment Date (DD/MM/YY): | | |

| | |
|----------------------------------|---|
| Candidate Details | Name: Registration/Roll Number: |
| Guidance for Candidate | <p>To meet this standard, you are required to complete the following within the given time frame (for practical demonstration & assessment):</p> <ol style="list-style-type: none"> 1. Download or record two videos then perform following tasks: <ul style="list-style-type: none"> Save them in MP4 format with resolutions of 720p minimum Crop both into half and merge both videos with resolution 480p pixels minimum Extract the frame containing text from video Save them in JPG format with resolutions of 1024 x 768 pixels' minimum Merge both images with resolution 640 x 480 pixels' minimum Run OCR and extract the text from image Extract audios tracks from video and save them in mp3 format Change bite rate to 64 kps Reduce noise if any in audio files |
| Time: 120 min | During a practical assessment, under observation by an assessor, you are required to perform above task by demonstrating the following criteria: |
| Minimum Evidence Required | <ol style="list-style-type: none"> 1. Convert image into specified format using suitable tools 2. Change resolution to the specified requirements 3. Crop the image to remove unwanted artifacts using suitable tools 4. Merge multiple images using suitable tools 5. Overlay text using suitable tools 6. Resize the image to specified size using suitable tools 7. Adjust image orientation to specified requirement using suitable tools 8. Prepare text based images for OCR (optical character recognition) using suitable tools 9. Convert video into specified format using suitable tools 10. Change resolution of the video to the specified requirements using suitable tools 11. Crop the video to remove unwanted duration using suitable tools 12. Crop the video to remove unwanted contents using suitable tools 13. Merge multiple videos using suitable tools 14. Adjust frame rate of video 15. Extract frames from video to save them in image format |

| | |
|--|--|
| | <ul style="list-style-type: none">16. Modify audio tracks of video using suitable tools17. Insert identifier in a video*18. Convert audio into specified format using suitable tools19. Adjust bit rate of audio using suitable tools20. Reduce noise from audio using suitable tools21. Enhance audio for pre processing |
|--|--|

Assessors Judgment Guide (to be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

| | |
|------------------------|--|
| Qualification | National Vocational Certificate Level 02 - Artificial Intelligence Data Technician |
| Competency Standard(s) | 1. Use Multimedia Processing |
| Candidate Details | Name: Registration/Roll Number: Candidate Signature: |
| Assessment Outcome | <p>COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/></p> <p>Name of the Assessor:..... Assessor's code:</p> <p>Signature of the Assessor:.....</p> |

| Assessment Summary (to be filled by the assessor) | | | | | | | |
|---|---------|------|-------------|-----------|-----------|-----------|-------------------|
| Activity | Method | | | | | Result | |
| Nature of Activity | Written | Oral | Observation | Portfolio | Role Play | Competent | Not Yet Competent |
| Practical Skill Demonstration | | | ✓ | | | | |
| Knowledge Assessment | | ✓ | | | | | |
| Other Requirement | | | | | | | |

Observation Checklist

| Assessment Task | | Description of assessment | | |
|--|--|---|----|---------|
| Assessment Task | | 1. Download or record two videos then perform following tasks: <ul style="list-style-type: none"> • Save them in MP4 format with resolutions of 720p minimum • Crop both into half and merge both videos with resolution 480p pixels minimum • Extract the frame containing text from video • Save them in JPGE format with resolutions of 1024 x 768 pixels' minimum • Merge both images with resolution 640 x 480 pixels' minimum • Run OCR and extract the text from image • Extract audios tracks from video and save them in mp3 format • Change bite rate to 64 kps • Reduce noise if any in audio files | | |
| During the practical assessment, candidate demonstrated the following: | | Yes | No | Remarks |
| 1. | Convert image into specified format using suitable tools | | | |
| 2. | Change resolution to the specified requirements | | | |
| 3. | Crop the image to remove unwanted artifacts using suitable tools | | | |
| 4. | Merge multiple images using suitable tools | | | |
| 5. | Overlay text using suitable tools | | | |
| 6. | Resize the image to specified size using suitable tools | | | |
| 7. | Adjust image orientation to specified requirement using suitable tools | | | |
| 8. | Prepare text based images for OCR (optical character recognition) using suitable tools | | | |
| 9. | Convert video into specified format using suitable tools | | | |
| 10. | Change resolution of the video to the specified requirements using suitable tools | | | |

| | | | | |
|------------------------------------|---|--|--|--|
| 11. | Crop the video to remove unwanted duration using suitable tools | | | |
| 12. | Crop the video to remove unwanted contents using suitable tools | | | |
| 13. | Merge multiple videos using suitable tools | | | |
| 14. | Adjust frame rate of video | | | |
| 15. | Extract frames from video to save them in image format | | | |
| 16. | Modify audio tracks of video using suitable tools | | | |
| 17. | Insert identifier in a video* | | | |
| 18. | Convert audio into specified format using suitable tools | | | |
| 19. | Adjust bit rate of audio using suitable tools | | | |
| 20. | Reduce noise from audio using suitable tools | | | |
| 21. | Enhance audio for pre processing | | | |
| Competent <input type="checkbox"/> | | Not Yet Competent <input type="checkbox"/> | | |

| Feedback to the Candidate | | |
|---|-------------------|--|
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| In terms of complete competency, the candidate was found: | Competent | |
| | Not Yet Competent | |
| Candidate's Signature:Assessor's Signature: | | |

Test Yourself (Multiple Choice Questions)

MODULE 1

- Question 1** Joint Photographic Experts Group (JPEG) is used to compress
- A. Music
 - B. Pictures
 - C. Images
 - D. Frames
- Question 2** If frames are displayed on screen fast enough, we get an impression of
- A. Signals
 - B. Motions
 - C. Packets
 - D. Bits
- Question 3** Moving Picture Experts Group (MPEG) is used to compress
- A. Images
 - B. Audio
 - C. Video
 - D. Images

Question 4 In Audio and Video Compression, each frame is divided into small grids, called picture elements or

- A. Frame
- B. Packets
- C. Pixels
- D. Mega Pixels

Question 5 A video consists of a sequence of

- A. Frames
- B. Signals
- C. Packets
- D. Slots

Question 6 Joint Photographic Experts Group (JPEG) is used to compress

- A.Music.
- B.Pictures.
- C.Images.
- D.Frames.

Question 7 MP3 produces three data rates from 96 Kbps to

A.128 Kbps.

B.164 Kbps.

C.256 Kbps.

D.320 Kbps.

Question 8

Question 9

Question 10

Answers

- Question 1: B
- Question 2: B
- Question 3: D
- Question 4: C
- Question 5: A
- Question 6: C
- Question 7: B
- Question 8:
- Question 9:
- Question 10:

Self-Assessment Checklist

| | |
|-----------------------------|--|
| Candidate Name | |
| Registration No. | |
| Qualification | National Vocational Certificate Level 2 - Artificial Intelligence Data Technician |
| Competency Standards | 061900927 Pre-Process Data |
| Assessment Task | <p>Assessment Task 1:</p> <p>A video file is provided (see annexure A)</p> <ul style="list-style-type: none"> • Take screenshots of all the cars and annotate them • Label the car names on the proper timestamp in the video • Extract audio form the video provided • Whenever a car is mentioned add noise • Label the name of the car mentioned <p>Assessment Task 2:</p> <p>An image file is provided (see annexure A). Run OCR on the file to extract the text.</p> |

I can.....

| Performance Criteria | Yes | No |
|---|--------------------------|--------------------------|
| 1. Scan text documents | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Scan pictures | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Perform OCR using suitable tool(s) | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Enter data into text document | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Enter data into spreadsheet | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Digitize analogue video using suitable device | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Digitize analogue audio using suitable device | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Arrange audio data using suitable tools | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Adjust image orientation to specified requirement using suitable tools | <input type="checkbox"/> | <input type="checkbox"/> |

| | | |
|---|--------------------------|--------------------------|
| 10. Prepare text based images for OCR(optical character recognition) using suitable tools | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. Arrange data in specified order | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. Correct errors in digitized textual data | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. Organize data as per requirements | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. Remove unwanted data | <input type="checkbox"/> | <input type="checkbox"/> |
| 15. Convert the digitized data into desired format and correct errors in transcribed data | <input type="checkbox"/> | <input type="checkbox"/> |
| 16. Annotate images by text labels | <input type="checkbox"/> | <input type="checkbox"/> |
| 17. Annotate images by bounding box | <input type="checkbox"/> | <input type="checkbox"/> |
| 18. Type text contained in images | <input type="checkbox"/> | <input type="checkbox"/> |
| 19. Apply Timestamp to transcript | <input type="checkbox"/> | <input type="checkbox"/> |
| 20. Label audio data with text as per requirements | <input type="checkbox"/> | <input type="checkbox"/> |
| 21. Label audio data with noise as per requirement | <input type="checkbox"/> | <input type="checkbox"/> |
| 22. Annotate text data based on desired features | <input type="checkbox"/> | <input type="checkbox"/> |
| 23. Annotate text data word by word for identification (Name, City etc.) | <input type="checkbox"/> | <input type="checkbox"/> |
| 24. Annotate text data word by word for classification | <input type="checkbox"/> | <input type="checkbox"/> |
| 25. Apply Timestamp | <input type="checkbox"/> | <input type="checkbox"/> |
| 26. Label video data with text as per requirements | <input type="checkbox"/> | <input type="checkbox"/> |
| 27. Label video data with specified noise | <input type="checkbox"/> | <input type="checkbox"/> |
| 28. Annotate image frames by text labels | <input type="checkbox"/> | <input type="checkbox"/> |
| 29. Annotate image frames by bounding box | <input type="checkbox"/> | <input type="checkbox"/> |
| 30. Type text contained in video | <input type="checkbox"/> | <input type="checkbox"/> |

Candidate's Signature: Assessor's Signature:

.....

Date:

Instruction Sheet for the Candidate

| | | | |
|--|------------------------------------|---------------|---------------------------|
| Title of Qualification: National Vocational Certificate Level 2 – Artificial Intelligence Data Technician | CS Code: | Level: | Version: 02 |
| Competency Standard Title: <ul style="list-style-type: none"> Pre-Process Data | Assessment Date (DD/MM/YY): | | |

| | |
|---------------------------|--|
| Candidate Details | Name: Registration/Roll Number: |
| Guidance for Candidate | <p>To meet this standard, you are required to complete the following within the given time frame (for practical demonstration & assessment):</p> <p>Assessment Task 1: A video file is provided (see annexure A)</p> <ol style="list-style-type: none"> 1. Take screenshots of all the cars and annotate them 2. Label the car names on the proper timestamp in the video 3. Extract audio form the video provided 4. Whenever a car is mentioned add noise 5. Label the name of the car mentioned <p>Assessment Task 2: An image file is provided (see annexure A). Run OCR on the file to extract the text</p> |
| Time: 120 min | During a practical assessment, under observation by an assessor, you are required to perform above task by demonstrating the following criteria: |
| Minimum Evidence Required | <ol style="list-style-type: none"> 1. Scan text documents 2. Scan pictures 3. Perform OCR using suitable tool(s) 4. Enter data into text document 5. Enter data into spreadsheet 6. Digitize analogue video using suitable device 7. Digitize analogue audio using suitable device 8. Arrange audio data using suitable tools 9. Adjust image orientation to specified requirement using suitable tools 10. Prepare text based images for OCR (optical character recognition) using suitable tools 11. Arrange data in specified order 12. Correct errors in digitized textual data 13. Organize data as per requirements 14. Remove unwanted data 15. Convert the digitized data into desired format and correct errors in transcribed data 16. Annotate images by text labels 17. Annotate images by bounding box 18. Type text contained in images 19. Apply Timestamp to transcript |

| | |
|--|---|
| | <ul style="list-style-type: none"> 20. Label audio data with text as per requirements 21. Label audio data with noise as per requirement 22. Annotate text data based on desired features 23. Annotate text data word by word for identification (Name, City etc.) 24. Annotate text data word by word for classification 25. Apply Timestamp 26. Label video data with text as per requirements 27. Label video data with specified noise 28. Annotate image frames by text labels 29. Annotate image frames by bounding box 30. Type text contained in video |
|--|---|

Assessors Judgment Guide (to be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

| | |
|------------------------|--|
| Qualification | National Vocational Certificate Level 02 - Artificial Intelligence Data Technician |
| Competency Standard(s) | 1. Pre-Process Data |
| Candidate Details | Name: Registration/Roll Number: Candidate Signature: |
| Assessment Outcome | <p>COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/></p> <p>Name of the Assessor:..... Assessor's code:</p> <p>Signature of the Assessor:.....</p> |

| Assessment Summary (to be filled by the assessor) | | | | | | | |
|---|---------|------|-------------|-----------|-----------|-----------|-------------------|
| Activity | Method | | | | | Result | |
| Nature of Activity | Written | Oral | Observation | Portfolio | Role Play | Competent | Not Yet Competent |
| Practical Skill Demonstration | | | ✓ | | | | |
| Knowledge Assessment | | ✓ | | | | | |
| Other Requirement | | | | | | | |

Observation Checklist

| Assessment Task | | Description of assessment | | |
|--|---|--|----|---------|
| Assessment Task 1 | | 1. A video file is provided (see annexure A) <ul style="list-style-type: none"> Take screenshots of all the cars and annotate them Label the car names on the proper timestamp in the video Extract audio form the video provided Whenever a car is mentioned add noise Label the name of the car mentioned | | |
| Assessment Task 2 | | An image file is provided (see annexure A). Run OCR on the file to extract the text | | |
| During the practical assessment, candidate demonstrated the following: | | Yes | No | Remarks |
| 1. | Scan text documents | | | |
| 2. | Scan pictures | | | |
| 3. | Perform OCR using suitable tool(s) | | | |
| 4. | Enter data into text document | | | |
| 5. | Enter data into spreadsheet | | | |
| 6. | Digitize analogue video using suitable device | | | |
| 7. | Digitize analogue audio using suitable device | | | |
| 8. | Arrange audio data using suitable tools | | | |
| 9. | Adjust image orientation to specified requirement using suitable tools | | | |
| 10. | Prepare text based images for OCR(optical character recognition) using suitable tools | | | |
| 11. | Arrange data in specified order | | | |
| 12. | Correct errors in digitized textual data | | | |
| 13. | Organize data as per requirements | | | |
| 14. | Remove unwanted data | | | |
| 15. | Convert the digitized data into desired format and correct errors in transcribed data | | | |

| | | | | |
|------------------------------------|---|--|--|--|
| 16. | Annotate images by text labels | | | |
| 17. | Annotate images by bounding box | | | |
| 18. | Type text contained in images | | | |
| 19. | Apply Timestamp to transcript | | | |
| 20. | Label audio data with text as per requirements | | | |
| 21. | Label audio data with noise as per requirement | | | |
| 22. | Annotate text data based on desired features | | | |
| 23. | Annotate text data word by word for identification (Name, City etc.) | | | |
| 24. | Annotate text data word by word for classification | | | |
| 25. | Apply Timestamp | | | |
| 26. | Label video data with text as per requirements | | | |
| 27. | Label video data with specified noise | | | |
| 28. | Annotate image frames by text labels | | | |
| 29. | Annotate image frames by bounding box | | | |
| 30. | Type text contained in video | | | |
| Competent <input type="checkbox"/> | | Not Yet Competent <input type="checkbox"/> | | |

| Feedback to the Candidate | | |
|---|-------------------|--|
| | | |
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| | | |
| In terms of complete competency, the candidate was found: | Competent | |
| | Not Yet Competent | |
| Candidate's Signature:Assessor's Signature: | | |

Test Yourself (Multiple Choice Questions)

MODULE 1

- Question 1** What does OCR do?
- A Change an video file to audio
 - B Extract text from an Image
 - C Combine Images into a slideshow
 - D Check for grammatical mistakes in text
- Question 2** Which one of the following is not an image file format
- A JPEG
 - B JPG
 - C PNG
 - D RAR
- Question 3** Why is noise added to an audio file
- A To cancel out the noise already present
 - B To improve the sound variation
 - C To increase the file size
 - D To act as markers in the audio file

Question 4 What is a frame ?

- A Another name for a bounding box
- B An extension for image files
- C One of the many still images that compose the complete video
- D The point in an audio file where noise is inserted

Question 5 What does the term “*timestamp*” mean ?

- A A analogue record of the time of occurrence of a particular event.
- B Filmmaking.
- C A digital record of the time of occurrence of a particular event.
- D Time recording.

Question 6 What is the purpose of data pre-processing ?

- A To make data useable.
- B To extract the relevant data.
- C To reduce the complexity of data.
- D All of above.

Question 7 Where timestamps are used ?

- A Images and PDFs
- B Audio and Video
- C PDF and Audio
- D Spread sheets and Videos

Question 8 Which tool is preferable to store the text data?

- A Spread Sheets
- B Notepad
- C PDF
- D Word Processor

Question 9 Which of the following is not an audio file format ?

- A Html
- B Mp3
- C PCM
- D WAV

Question 10 Taking a screen shot from a video might result in what kind of image ?

- A Increase brightness
- B Decrease brightness
- C Rotated image
- D Blurry Image

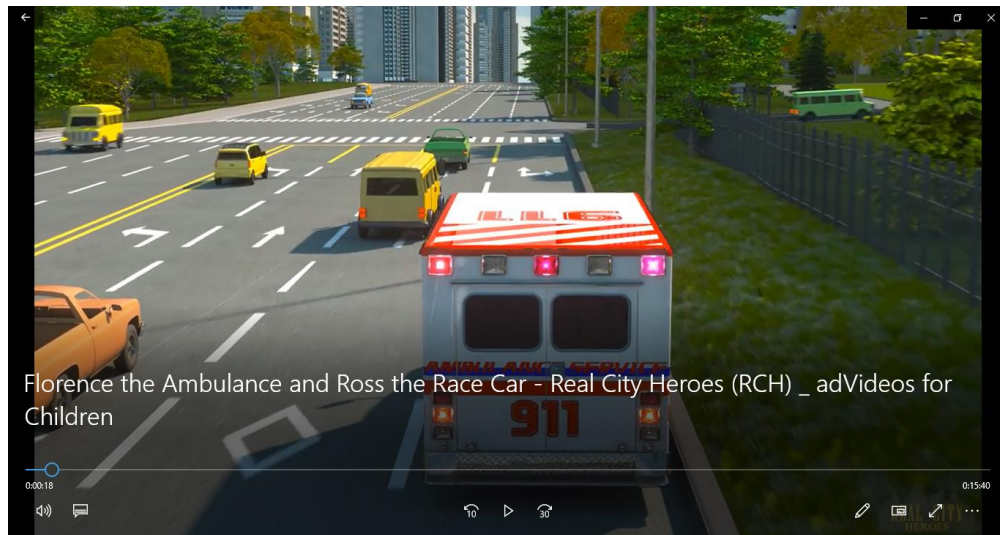
Answers Key

- Question 1: **B**
- Question 2: **D**
- Question 3: **D**
- Question 4: **C**
- Question 5: **C**
- Question 6: **D**
- Question 7: **B**
- Question 8: **A**
- Question 9: **A**
- Question 10: **D**

ANNUXURE-A

Video and Audio:

Please download following video from link given below (also extract audio from same video):



Link: <https://www.youtube.com/watch?v=JSsTkZ6zorM>

Image:

| Car Name | Model | Country of Manufacture |
|---------------|------------------------|------------------------|
| Audi | R8 Spyder | Germany |
| Aston Martin | V8 VANTAGE S | British |
| ACURA | ACURA NSX | Japan |
| BMW | BMW 3 Series GT | Germany |
| Bentley | Bentley Continental GT | British |
| Bugatti | Bugatti Veyron | France |
| Cadillac | CT6-V | USA |
| Chevrolet | CORVETTE ZR1 | USA |
| Honda | NSX-GT | Japan |
| Ford | F-150 RAPTOR | USA |
| McLaren | McLaren 570S | Italy |
| Ferrari | Ferrari 488 Spider | Italy |
| McLaren | McLaren 570S | British |
| Lamborghini | Lamborghini Veneno | Italy |
| Mercedes-Benz | Mercedes-AMG GT R | Germany |
| Rolls Royce | Rolls-Royce Phantom | Germany |
| Nissan | Nissan 370Z | Japan |
| Porsche | 718 Boxster | Germany |
| Tesla | Tesla Roadster | USA |
| Mazda | MAZDA6 | Japan |

Knowledge Assessment

| | |
|------------------------|--|
| Qualification | National Vocational Certificate Level 01 - Artificial Intelligence Data Technician |
| Competency Standard(s) | Use of Spreadsheet |
| Candidate Details | Name: Registration/Roll Number: Candidate Signature:..... |
| Assessment Outcome | <div style="display: flex; justify-content: space-between;"> COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> </div> Name of the Assessor: Assessor's code: Signature of the Assessor: |

Candidate's response is not required to be identical, but similar concepts and/or keywords must be used. Oral questioning may be used to clarify candidate understanding of topic and its application.

| Questions (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application) | | Satisfactory | Not Satisfactory |
|---|---|--------------|------------------|
| 1. | Explain Spreadsheet and its Basics. | | |
| | Candidate's response | | |
| 2. | Summarize filtering in spreadsheet. | | |
| | | | |
| 3. | Explain pivot tables. | | |
| | | | |
| 4. | Identify the tool used for plotting data. | | |
| | | | |
| 5. | Define concatenation? | | |

| | | | |
|-----|--|--|--|
| | | | |
| 6. | List the data formats available in Excel? | | |
| | | | |
| 7. | Name the different types of charts? | | |
| | | | |
| 8. | Write five useful functions of spreadsheets? | | |
| | | | |
| 9. | Summarize how to sum up the rows and column number in the Excel sheet? | | |
| | | | |
| 10. | Outline how to add a new Excel worksheet? | | |
| | | | |

Knowledge Assessment

| | |
|------------------------|--|
| Qualification | National Vocational Certificate Level 02 - Artificial Intelligence Data Technician |
| Competency Standard(s) | Use Multimedia Processing |
| Candidate Details | Name: Registration/Roll Number: Candidate Signature:..... |
| Assessment Outcome | <div style="display: flex; justify-content: space-between;"> COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> </div> Name of the Assessor: Assessor's code: Signature of the Assessor: |

Candidate's response is not required to be identical, but similar concepts and/or keywords must be used. Oral questioning may be used to clarify candidate understanding of topic and its application.

| Questions (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application) | | Satisfactory | Not Satisfactory |
|---|--------------------------------------|--------------|------------------|
| 1. | List any three video file formats? | | |
| | | | |
| 2. | State any three audio file formats? | | |
| | | | |
| 3. | Recall any three image file formats? | | |
| | | | |
| 4. | Define resolution? | | |
| | | | |
| 5. | Describe bit rate? | | |

| | | | |
|-----|--|--|--|
| | | | |
| 6. | Explain noise in an audio file? | | |
| | | | |
| 7. | Summarize what a frame is in the context of a video? | | |
| | | | |
| 8. | State the full form of OCR | | |
| | | | |
| 9. | Recall that images are made up of individual pixels, what are the pixels made up of? | | |
| | | | |
| 10. | Identify whether changing a video from one format to another, can result in a change of size | | |
| | | | |

Knowledge Assessment

| | |
|------------------------|--|
| Qualification | National Vocational Certificate Level 02 - Artificial Intelligence Data Technician |
| Competency Standard(s) | Pre-Process Data |
| Candidate Details | Name: Registration/Roll Number: Candidate Signature:..... |
| Assessment Outcome | <div style="display: flex; justify-content: space-between;"> COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> </div> Name of the Assessor: Assessor's code: Signature of the Assessor: |

Candidate's response is not required to be identical, but similar concepts and/or keywords must be used. Oral questioning may be used to clarify candidate understanding of topic and its application.

| Questions (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application) | | Satisfactory | Not Satisfactory |
|---|--|--------------|------------------|
| 1. | Explain the purpose of bounding boxes | | |
| | | | |
| 2. | Describe the reason noise is added to video or audio files? | | |
| | | | |
| 3. | Define frame rate? | | |
| | | | |
| 4. | Explain is data annotation in the context of images and videos | | |

| | | | |
|-----|---|--|--|
| | | | |
| 5. | Define timestamp? | | |
| | | | |
| 6. | List the three ways to label audio data | | |
| | | | |
| 7. | Name any three video labelling tools | | |
| | | | |
| 8. | Explain why timestamps are not used with images | | |
| | | | |
| 9. | Contrast labeling videos using noise to labeling video frames with bounding box | | |
| | | | |
| 10. | Define transcript | | |
| | | | |

Self-Assessment Checklist

| | |
|-----------------------------|--|
| Candidate Name | |
| Registration No. | |
| Qualification | National Vocational Certificate Level 2 - Artificial Intelligence Data Technician |
| Competency Standards | <ul style="list-style-type: none"> • 061900925 Use of Spreadsheet • 061900926 Use Multimedia Processing • 061900927 Pre-Process Data |
| Assessment Task | <p>Assessment Task 1:</p> <p>A video file is provided (see annexure A)</p> <ul style="list-style-type: none"> • Take screenshots of all the cars and annotate them • Label the car names on the proper timestamp in the video • Prepare a spreadsheet which includes the cars name, color and the annotated images in the proper order • Extract audio form the video provided • Whenever a car is mentioned add noise • Label the name of the car mentioned <p>Assessment Task 2:</p> <p>An image file is provided (see annexure A)</p> <ul style="list-style-type: none"> • Run OCR on the file to extract the text • Enter the data in an excel sheet and remove entries costing more than xx dollars |

I can.....

| Performance Criteria | Yes | No |
|----------------------|-----|----|
| | | |

| | | |
|--|--------------------------|--------------------------|
| 1. Format cells as required | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Insert data in multiple cells | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Edit data in multiple cells | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Delete data in multiple cells | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Copy data from specified cells | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Paste data into specified cells | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Move data to or from specified cells | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Merge multiple cells | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Unmerge multiple cells | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Hide specified row(s) | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. Unhide row(s) | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. Hide specified columns(s) | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. Unhide column(s) | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. Insert column at desired location in a worksheet | <input type="checkbox"/> | <input type="checkbox"/> |
| 15. Delete specified row(s) | <input type="checkbox"/> | <input type="checkbox"/> |
| 16. Insert column at desired location | <input type="checkbox"/> | <input type="checkbox"/> |
| 17. Delete specified column(s) | <input type="checkbox"/> | <input type="checkbox"/> |
| 18. Apply cell referencing | <input type="checkbox"/> | <input type="checkbox"/> |
| 19. Import data from external source | <input type="checkbox"/> | <input type="checkbox"/> |
| 20. Sort data in ascending order | <input type="checkbox"/> | <input type="checkbox"/> |
| 21. Sort data in descending order | <input type="checkbox"/> | <input type="checkbox"/> |
| 22. Apply single level filter | <input type="checkbox"/> | <input type="checkbox"/> |
| 23. Apply multi-level filter | <input type="checkbox"/> | <input type="checkbox"/> |
| 24. Create different types of data series | <input type="checkbox"/> | <input type="checkbox"/> |
| 25. Apply arithmetic formula | <input type="checkbox"/> | <input type="checkbox"/> |
| 26. Apply concatenation formula | <input type="checkbox"/> | <input type="checkbox"/> |
| 27. Calculate string length using formula | <input type="checkbox"/> | <input type="checkbox"/> |
| 28. Select desired part of string using formula | <input type="checkbox"/> | <input type="checkbox"/> |
| 29. Copy formula using different cell referencing | <input type="checkbox"/> | <input type="checkbox"/> |
| 30. Use Look-up function | <input type="checkbox"/> | <input type="checkbox"/> |

| | | |
|--|--------------------------|--------------------------|
| 31. Use Count Formula | <input type="checkbox"/> | <input type="checkbox"/> |
| 32. Use Find formula | <input type="checkbox"/> | <input type="checkbox"/> |
| 33. Take data sum, sub, max, min, variance, mean, median, average, round, using formula | <input type="checkbox"/> | <input type="checkbox"/> |
| 34. Take count of entities using formula | <input type="checkbox"/> | <input type="checkbox"/> |
| 35. Take count of blanks using formula | <input type="checkbox"/> | <input type="checkbox"/> |
| 36. Calculate minimum of entities using formula | <input type="checkbox"/> | <input type="checkbox"/> |
| 37. Calculate maximum of entities using formula | <input type="checkbox"/> | <input type="checkbox"/> |
| 38. Select entity based on condition | <input type="checkbox"/> | <input type="checkbox"/> |
| 39. Arrange data in an appropriate format | <input type="checkbox"/> | <input type="checkbox"/> |
| 40. Apply pivot table operation | <input type="checkbox"/> | <input type="checkbox"/> |
| 41. Specify data to plot | <input type="checkbox"/> | <input type="checkbox"/> |
| 42. Specify chart type | <input type="checkbox"/> | <input type="checkbox"/> |
| 43. Format Chart | <input type="checkbox"/> | <input type="checkbox"/> |
| 44. Apply designs to chart | <input type="checkbox"/> | <input type="checkbox"/> |
| 45. Convert image into specified format using suitable tools | <input type="checkbox"/> | <input type="checkbox"/> |
| 46. Change resolution to the specified requirements | <input type="checkbox"/> | <input type="checkbox"/> |
| 47. Crop the image to remove unwanted artifacts using suitable tools | <input type="checkbox"/> | <input type="checkbox"/> |
| 48. Merge multiple images using suitable tools | <input type="checkbox"/> | <input type="checkbox"/> |
| 49. Overlay text using suitable tools | <input type="checkbox"/> | <input type="checkbox"/> |
| 50. Resize the image to specified size using suitable tools | <input type="checkbox"/> | <input type="checkbox"/> |
| 51. Adjust image orientation to specified requirement using suitable tools | <input type="checkbox"/> | <input type="checkbox"/> |
| 52. Prepare text based images for OCR (optical character recognition) using suitable tools | <input type="checkbox"/> | <input type="checkbox"/> |
| 53. Convert video into specified format using suitable tools | <input type="checkbox"/> | <input type="checkbox"/> |
| 54. Change resolution of the video to the specified requirements using suitable tools | <input type="checkbox"/> | <input type="checkbox"/> |
| 55. Crop the video to remove unwanted duration using suitable tools | <input type="checkbox"/> | <input type="checkbox"/> |
| 56. Crop the video to remove unwanted contents using suitable tools | <input type="checkbox"/> | <input type="checkbox"/> |
| 57. Merge multiple videos using suitable tools | <input type="checkbox"/> | <input type="checkbox"/> |
| 58. Adjust frame rate of video | <input type="checkbox"/> | <input type="checkbox"/> |
| 59. Extract frames from video to save them in image format | <input type="checkbox"/> | <input type="checkbox"/> |

| | | |
|---|--------------------------|--------------------------|
| 60. Modify audio tracks of video using suitable tools | <input type="checkbox"/> | <input type="checkbox"/> |
| 61. Insert identifier in a video | <input type="checkbox"/> | <input type="checkbox"/> |
| 62. Convert audio into specified format using suitable tools | <input type="checkbox"/> | <input type="checkbox"/> |
| 63. Adjust bit rate of audio using suitable tools | <input type="checkbox"/> | <input type="checkbox"/> |
| 64. Reduce noise from audio using suitable tools | <input type="checkbox"/> | <input type="checkbox"/> |
| 65. Enhance audio for pre processing | <input type="checkbox"/> | <input type="checkbox"/> |
| 66. Scan text documents | <input type="checkbox"/> | <input type="checkbox"/> |
| 67. Scan pictures | <input type="checkbox"/> | <input type="checkbox"/> |
| 68. Perform OCR using suitable tool(s) | <input type="checkbox"/> | <input type="checkbox"/> |
| 69. Enter data into text document | <input type="checkbox"/> | <input type="checkbox"/> |
| 70. Enter data into spreadsheet | <input type="checkbox"/> | <input type="checkbox"/> |
| 71. Digitize analogue video using suitable device | <input type="checkbox"/> | <input type="checkbox"/> |
| 72. Digitize analogue audio using suitable device | <input type="checkbox"/> | <input type="checkbox"/> |
| 73. Arrange audio data using suitable tools | <input type="checkbox"/> | <input type="checkbox"/> |
| 74. Adjust image orientation to specified requirement using suitable tools | <input type="checkbox"/> | <input type="checkbox"/> |
| 75. Prepare text based images for OCR(optical character recognition) using suitable tools | <input type="checkbox"/> | <input type="checkbox"/> |
| 76. Arrange data in specified order | <input type="checkbox"/> | <input type="checkbox"/> |
| 77. Correct errors in digitized textual data | <input type="checkbox"/> | <input type="checkbox"/> |
| 78. Organize data as per requirements | <input type="checkbox"/> | <input type="checkbox"/> |
| 79. Remove unwanted data | <input type="checkbox"/> | <input type="checkbox"/> |
| 80. Convert the digitized data into desired format and correct errors in transcribed data | <input type="checkbox"/> | <input type="checkbox"/> |
| 81. Annotate images by text labels | <input type="checkbox"/> | <input type="checkbox"/> |
| 82. Annotate images by bounding box | <input type="checkbox"/> | <input type="checkbox"/> |
| 83. Type text contained in images | <input type="checkbox"/> | <input type="checkbox"/> |
| 84. Apply Timestamp to transcript | <input type="checkbox"/> | <input type="checkbox"/> |
| 85. Label audio data with text as per requirements | <input type="checkbox"/> | <input type="checkbox"/> |
| 86. Label audio data with noise as per requirement | <input type="checkbox"/> | <input type="checkbox"/> |
| 87. Annotate text data based on desired features | <input type="checkbox"/> | <input type="checkbox"/> |
| 88. Annotate text data word by word for identification (Name, City etc.) | <input type="checkbox"/> | <input type="checkbox"/> |

| | | |
|--|----------------------|----------------------|
| 89. Annotate text data word by word for classification | <input type="text"/> | <input type="text"/> |
| 90. Apply Timestamp | <input type="text"/> | <input type="text"/> |
| 91. Label video data with text as per requirements | <input type="text"/> | <input type="text"/> |
| 92. Label video data with specified noise | <input type="text"/> | <input type="text"/> |
| 93. Annotate image frames by text labels | <input type="text"/> | <input type="text"/> |
| 94. Annotate image frames by bounding box | <input type="text"/> | <input type="text"/> |
| 95. Type text contained in video | <input type="text"/> | <input type="text"/> |

Candidate's Signature: Assessor's Signature:
.....

Date:

Instruction Sheet for the Candidate

| | | | |
|---|------------------------------------|--------|----------------|
| Title of Qualification: National Vocational Certificate Level 2 – Artificial Intelligence Data Technician | CS Code: | Level: | Version: 02 |
| Competency Standard Title: <ul style="list-style-type: none"> • Use of Spreadsheet • Use Multimedia Processing • Pre-Process Data | Assessment Date (DD/MM/YY): | | |

| | |
|---------------------------|--|
| Candidate Details | Name: Registration/Roll Number: |
| Guidance for Candidate | <p>To meet this standard, you are required to complete the following within the given time frame (for practical demonstration & assessment):</p> <p>Assessment Task 1: A video file is provided (see annexure A)</p> <ol style="list-style-type: none"> 1. Take screenshots of all the cars and annotate them 2. Label the car names on the proper timestamp in the video 3. Prepare a spreadsheet which includes the cars name, color and the annotated images in the proper order 4. Extract audio form the video provided 5. Whenever a car is mentioned add noise 6. Label the name of the car mentioned <p>Assessment Task 2: An image file is provided (see annexure A)</p> <ol style="list-style-type: none"> 1. Run OCR on the file to extract the text 2. Enter the data in an excel sheet and remove entries costing more than xx dollars |
| Time: 120 min | During a practical assessment, under observation by an assessor, you are required to perform above task by demonstrating the following criteria: |
| Minimum Evidence Required | <ol style="list-style-type: none"> 1. Format cells as required 2. Insert data in multiple cells 3. Edit data in multiple cells 4. Delete data in multiple cells 5. Copy data from specified cells 6. Paste data into specified cells 7. Move data to or from specified cells 8. Merge multiple cells |

| | |
|--|---|
| | <ul style="list-style-type: none"> 9. Unmerge multiple cells 10. Hide specified row(s) 11. Unhide row(s) 12. Hide specified columns(s) 13. Unhide column(s) 14. Insert column at desired location in a worksheet 15. Delete specified row(s) 16. Insert column at desired location 17. Delete specified column(s) 18. Apply cell referencing 19. Import data from external source 20. Sort data in ascending order 21. Sort data in descending order 22. Apply single level filter 23. Apply multi-level filter 24. Create different types of data series 25. Apply arithmetic formula 26. Apply concatenation formula 27. Calculate string length using formula 28. Select desired part of string using formula 29. Copy formula using different cell referencing 30. Use Look-up function 31. Use Count Formula 32. Use Find formula 33. Take data sum, sub, max, min, variance, mean, median, average, round, using formula 34. Take count of entities using formula 35. Take count of blanks using formula 36. Calculate minimum of entities using formula 37. Calculate maximum of entities using formula 38. Select entity based on condition 39. Arrange data in an appropriate format 40. Apply pivot table operation 41. Specify data to plot 42. Specify chart type |
|--|---|

| | |
|--|---|
| | <p>43. Format Chart</p> <p>44. Apply designs to chart</p> <p>45. Convert image into specified format using suitable tools</p> <p>46. Change resolution to the specified requirements</p> <p>47. Crop the image to remove unwanted artifacts using suitable tools</p> <p>48. Merge multiple images using suitable tools</p> <p>49. Overlay text using suitable tools</p> <p>50. Resize the image to specified size using suitable tools</p> <p>51. Adjust image orientation to specified requirement using suitable tools</p> <p>52. Prepare text based images for OCR (optical character recognition) using suitable tools</p> <p>53. Convert video into specified format using suitable tools</p> <p>54. Change resolution of the video to the specified requirements using suitable tools</p> <p>55. Crop the video to remove unwanted duration using suitable tools</p> <p>56. Crop the video to remove unwanted contents using suitable tools</p> <p>57. Merge multiple videos using suitable tools</p> <p>58. Adjust frame rate of video</p> <p>59. Extract frames from video to save them in image format</p> <p>60. Modify audio tracks of video using suitable tools</p> <p>61. Insert identifier in a video</p> <p>62. Convert audio into specified format using suitable tools</p> <p>63. Adjust bit rate of audio using suitable tools</p> <p>64. Reduce noise from audio using suitable tools</p> <p>65. Enhance audio for pre processing</p> <p>66. Scan text documents</p> <p>67. Scan pictures</p> <p>68. Perform OCR using suitable tool(s)</p> <p>69. Enter data into text document</p> <p>70. Enter data into spreadsheet</p> <p>71. Digitize analogue video using suitable device</p> <p>72. Digitize analogue audio using suitable device</p> <p>73. Arrange audio data using suitable tools</p> <p>74. Adjust image orientation to specified requirement using suitable tools</p> <p>75. Prepare text based images for OCR(optical character recognition) using suitable tools</p> |
|--|---|

| | |
|--|---|
| | 76. Arrange data in specified order 77. Correct errors in digitized textual data 78. Organize data as per requirements 79. Remove unwanted data 80. Convert the digitized data into desired format and correct errors in transcribed data 81. Annotate images by text labels 82. Annotate images by bounding box 83. Type text contained in images 84. Apply Timestamp to transcript 85. Label audio data with text as per requirements 86. Label audio data with noise as per requirement 87. Annotate text data based on desired features 88. Annotate text data word by word for identification (Name, City etc.) 89. Annotate text data word by word for classification 90. Apply Timestamp 91. Label video data with text as per requirements 92. Label video data with specified noise 93. Annotate image frames by text labels 94. Annotate image frames by bounding box 95. Type text contained in video |
|--|---|

Assessors Judgment Guide (to be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

| | |
|------------------------|---|
| Qualification | National Vocational Certificate Level 02 - Artificial Intelligence Data Technician |
| Competency Standard(s) | 1. Use of Spreadsheet 2. Use Multimedia Processing 3. Pre-Process Data |
| Candidate Details | Name: Registration/Roll Number: Candidate Signature: |
| Assessment Outcome | COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor:..... Assessor's code: Signature of the Assessor:..... |

| Assessment Summary (to be filled by the assessor) | | | | | | | |
|---|---------|------|-------------|-----------|-----------|-----------|-------------------|
| Activity | Method | | | | | Result | |
| Nature of Activity | Written | Oral | Observation | Portfolio | Role Play | Competent | Not Yet Competent |
| Practical Skill Demonstration | | | ✓ | | | | |
| Knowledge Assessment | | ✓ | | | | | |
| Other Requirement | | | | | | | |

Observation Checklist

| Assessment Task | | Description of assessment | | |
|--|--|---|----|---------|
| Assessment Task 1 | | A video file is provided (see annexure A) <ol style="list-style-type: none"> 1. Take screenshots of all the cars and annotate them 2. Label the car names on the proper timestamp in the video 3. Prepare a spreadsheet which includes the cars name, color and the annotated images in the proper order 4. Extract audio form the video provided 5. Whenever a car is mentioned add noise 6. Label the name of the car mentioned | | |
| Assessment Task 2 | | An image file is provided (see annexure A) <ol style="list-style-type: none"> 1. Run OCR on the file to extract the text 2. Enter the data in an excel sheet and remove entries costing more than xx dollars | | |
| During the practical assessment, candidate demonstrated the following: | | Yes | No | Remarks |
| 1. | Format cells as required | | | |
| 2. | Insert data in multiple cells | | | |
| 3. | Edit data in multiple cells | | | |
| 4. | Delete data in multiple cells | | | |
| 5. | Copy data from specified cells | | | |
| 6. | Paste data into specified cells | | | |
| 7. | Move data to or from specified cells | | | |
| 8. | Merge multiple cells | | | |
| 9. | Unmerge multiple cells | | | |
| 10. | Hide specified row(s) | | | |
| 11. | Unhide row(s) | | | |
| 12. | Hide specified columns(s) | | | |
| 13. | Unhide column(s) | | | |
| 14. | Insert column at desired location in a worksheet | | | |
| 15. | Delete specified row(s) | | | |
| 16. | Insert column at desired location | | | |
| 17. | Delete specified column(s) | | | |
| 18. | Apply cell referencing | | | |

| | | | | |
|-----|---|--|--|--|
| 19. | Import data from external source | | | |
| 20. | Sort data in ascending order | | | |
| 21. | Sort data in descending order | | | |
| 22. | Apply single level filter | | | |
| 23. | Apply multi-level filter | | | |
| 24. | Create different types of data series | | | |
| 25. | Apply arithmetic formula | | | |
| 26. | Apply concatenation formula | | | |
| 27. | Calculate string length using formula | | | |
| 28. | Select desired part of string using formula | | | |
| 29. | Copy formula using different cell referencing | | | |
| 30. | Use Look-up function | | | |
| | Use Count Formula | | | |
| 31. | Use Find formula | | | |
| 32. | Take data sum, sub, max, min, variance, mean, median, average, round, using formula | | | |
| 33. | Take count of entities using formula | | | |
| 34. | Take count of blanks using formula | | | |
| 35. | Calculate minimum of entities using formula | | | |
| 36. | Calculate maximum of entities using formula | | | |
| 37. | Select entity based on condition | | | |
| 38. | Arrange data in an appropriate format | | | |
| 39. | Apply pivot table operation | | | |
| 40. | Specify data to plot | | | |
| 41. | Specify chart type | | | |
| 42. | Format Chart | | | |
| 43. | Apply designs to chart | | | |
| 44. | Convert image into specified format using suitable tools | | | |
| 45. | Change resolution to the specified requirements | | | |

| | | | | |
|-----|--|--|--|--|
| 46. | Crop the image to remove unwanted artifacts using suitable tools | | | |
| 47. | Merge multiple images using suitable tools | | | |
| 48. | Overlay text using suitable tools | | | |
| 49. | Resize the image to specified size using suitable tools | | | |
| 50. | Adjust image orientation to specified requirement using suitable tools | | | |
| 51. | Prepare text based images for OCR (optical character recognition) using suitable tools | | | |
| 52. | Convert video into specified format using suitable tools | | | |
| 53. | Change resolution of the video to the specified requirements using suitable tools | | | |
| 54. | Crop the video to remove unwanted duration using suitable tools | | | |
| 55. | Crop the video to remove unwanted contents using suitable tools | | | |
| 56. | Merge multiple videos using suitable tools | | | |
| 57. | Adjust frame rate of video | | | |
| 58. | Extract frames from video to save them in image format | | | |
| 59. | Modify audio tracks of video using suitable tools | | | |
| 60. | Insert identifier in a video | | | |
| 61. | Convert audio into specified format using suitable tools | | | |
| 62. | Adjust bit rate of audio using suitable tools | | | |
| 63. | Reduce noise from audio using suitable tools | | | |
| 64. | Enhance audio for pre processing | | | |
| 65. | Scan text documents | | | |
| 66. | Scan pictures | | | |
| 67. | Perform OCR using suitable tool(s) | | | |
| 68. | Enter data into text document | | | |
| 69. | Enter data into spreadsheet | | | |

| | | | | |
|------------------------------------|---|--|--|--|
| 70. | Digitize analogue video using suitable device | | | |
| 71. | Digitize analogue audio using suitable device | | | |
| 72. | Arrange audio data using suitable tools | | | |
| 73. | Adjust image orientation to specified requirement using suitable tools | | | |
| 74. | Prepare text based images for OCR(optical character recognition) using suitable tools | | | |
| 75. | Arrange data in specified order | | | |
| 76. | Correct errors in digitized textual data | | | |
| 77. | Organize data as per requirements | | | |
| 78. | Remove unwanted data | | | |
| 79. | Convert the digitized data into desired format and correct errors in transcribed data | | | |
| 80. | Annotate images by text labels | | | |
| 81. | Annotate images by bounding box | | | |
| 82. | Type text contained in images | | | |
| 83. | Apply Timestamp to transcript | | | |
| 84. | Label audio data with text as per requirements | | | |
| 85. | Label audio data with noise as per requirement | | | |
| 86. | Annotate text data based on desired features | | | |
| 87. | Annotate text data word by word for identification (Name, City etc.) | | | |
| 88. | Annotate text data word by word for classification | | | |
| 89. | Apply Timestamp | | | |
| 90. | Label video data with text as per requirements | | | |
| 91. | Label video data with specified noise | | | |
| 92. | Annotate image frames by text labels | | | |
| 93. | Annotate image frames by bounding box | | | |
| 94. | Type text contained in video | | | |
| 95. | Format cells as required | | | |
| Competent <input type="checkbox"/> | | Not Yet Competent <input type="checkbox"/> | | |

| Feedback to the Candidate | | |
|---|-------------------|--|
| | | |
| | | |
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| | | |
| | | |
| In terms of complete competency, the candidate was found: | Competent | |
| | Not Yet Competent | |
| Candidate's Signature:Assessor's Signature: | | |

Test Yourself (Multiple Choice Questions)

M 1
C
D
U
L
E

Q 1
u
e
s
t
i
o
n

Which one of the following options is used to cut the text in spreadsheet

A Ctrl+x

B Ctrl+v

C Ctrl+w

D Ctrl+s

Q 2
u
e
s
t
i
o
n

Which function tells how many numeric entries there in a cell are?

A Num

B Count

C Sum

D Chknum

Q 3
u
e
s
t
i
o
n

The process of arranging the items of a column in some sequence or order is known as:

- A Arranging
- B Auto Filling
- C Sorting
- D Filtering

Q 4
u
e
s
t
i
o
n

How can you remove borders applied in a cell?

- A Choose None on Border tab of Format cells
- B Open the list on Border tool in Formatting toolbar then choose first tool (no border)
- C Both of above
- D None of above

Q 5
u
e
s
t
i
o
n

Which of the following commands will you use to convert the column of data into row?

- A Cut and Paste
- B Edit >> Paste Special >> Transpose
- C Both of above
- D None of above

Q 6
u
e
s
t
i
o
n

What would be the result of following command?
Edit >> Delete Command

- A Deletes the content of a cell
- B Deletes the format of cell
- C Deletes the comment of cell
- D Deletes selected cells

Q 7
u
e
s
t
i
o
n

The process of getting data from a cell located in a different sheet is called as?

- A Accessing
- B Referencing
- C Updating
- D Functioning

Q 8
u
e
s
t
i
o
n

How would you rearrange the data in ascending/descending order?

- A Data, Sort
- B Data, Form
- C Data, Table
- D Data Subtotals

Q 9
u
e
s
t
i
o
n

Merge cells option can be applied from

A Format Cells dialog box Alignment Tab

B Formatting toolbar

C Both of above

D None of above

Q 10
u
e
s
t
i
o
n

While Formatting a cell in Currency, you can specify

A Decimal Places

B Currency Symbol

C Percentage Symbol

D None of above

MODULE 2

Question 1 Joint Photographic Experts Group (JPEG) is used to compress

A. Music

B. Pictures

C. Images

D. Frames

- Question 2** If frames are displayed on screen fast enough, we get an impression of
- A. Signals
 - B. Motions
 - C. Packets
 - D. Bits
- Question 3** Moving Picture Experts Group (MPEG) is used to compress
- A. Images
 - B. Audio
 - C. Video
 - D. Images
- Question 4** In Audio and Video Compression, each frame is divided into small grids, called picture elements or
- A. Frame
 - B. Packets
 - C. Pixels
 - D. Mega Pixels

Question 5 A video consists of a sequence of

A. Frames

B. Signals

C. Packets

D. Slots

Question 6

Question 7 MP3 produces three data rates from 96 Kbps to

A.128 Kbps.

B.164 Kbps.

C.256 Kbps.

D.320 Kbps.

MODULE 3

- Question 1** What does OCR do?
- A Change an video file to audio
 - B Extract text from an Image
 - C Combine Images into a slideshow
 - D Check for grammatical mistakes in text
- Question 2** Which one of the following is not an image file format
- A JPEG
 - B JPG
 - C PNG
 - D RAR
- Question 3** Why is noise added to an audio file
- A To cancel out the noise already present
 - B To improve the sound variation
 - C To increase the file size
 - D To act as markers in the audio file

Question 4 What is a frame ?

- A Another name for a bounding box
- B An extension for image files
- C One of the many still images that compose the complete video
- D The point in an audio file where noise is inserted

Question 5 What does the term “*timestamp*” mean ?

- A A analogue record of the time of occurrence of a particular event.
- B Filmmaking.
- C A digital record of the time of occurrence of a particular event.
- D Time recording.

Question 6 What is the purpose of data pre-processing ?

- A To make data useable.
- B To extract the relevant data.
- C To reduce the complexity of data.
- D All of above.

Question 7 Where timestamps are used ?

- A Images and PDFs
- B Audio and Video
- C PDF and Audio
- D Spread sheets and Videos

Question 8 Which tool is preferable to store the text data?

A Spread Sheets

B Notepad

C PDF

D Word Processor

Question 9 Which of the following is not an audio file format ?

A Html

B Mp3

C PCM

D WAV

Question 10 Taking a screen shot from a video might result in what kind of image ?

A Increase brightness

B Decrease brightness

C Rotated image

D Blurry Image

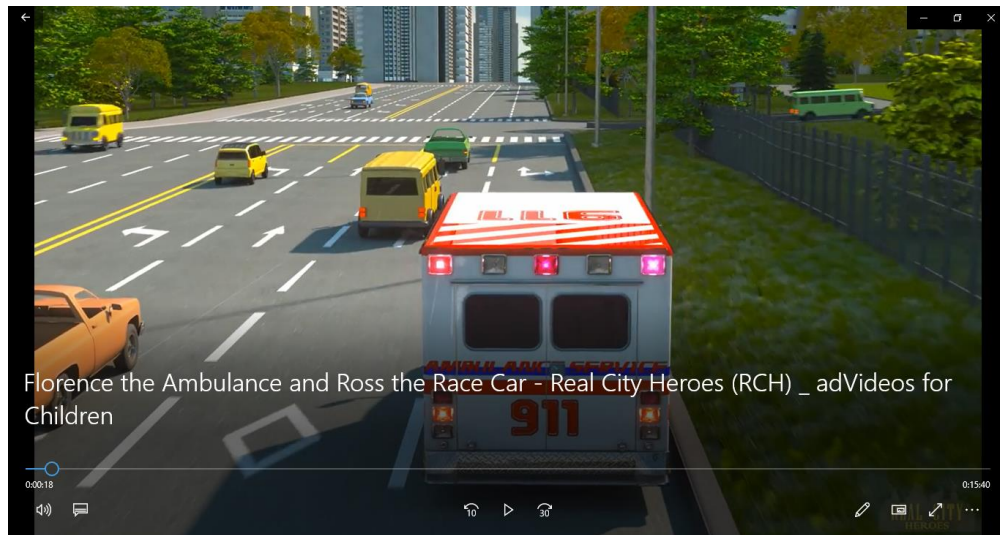
Answers Key:

| Answers – Module 1 | Answers – Module 2 | Answers – Module 3 |
|---------------------------|---------------------------|---------------------------|
| | | |
| 1. A | 1. B | 1. B |
| 2. B | 2. B | 2. D |
| 3. C | 3. D | 3. D |
| 4. C | 4. C | 4. C |
| 5. B | 5. A | 5. C |
| 6. D | 6. C | 6. D |
| 7. B | 7. B | 7. B |
| 8. A | 8. | 8. A |
| 9. A | 9. | 9. A |
| 10. B | 10. | 10. D |

ANNUXURE-A

Video and Audio:

Please download following video from link given below (also extract audio from same video):



Link: <https://www.youtube.com/watch?v=JSsTkZ6zorM>

Image:

| Car Name | Model | Country of Manufacture |
|---------------|------------------------|------------------------|
| Audi | R8 Spyder | Germany |
| Aston Martin | V8 VANTAGE S | British |
| ACURA | ACURA NSX | Japan |
| BMW | BMW 3 Series GT | Germany |
| Bentley | Bentley Continental GT | British |
| Bugatti | Bugatti Veyron | France |
| Cadillac | CT6-V | USA |
| Chevrolet | CORVETTE ZR1 | USA |
| Honda | NSX-GT | Japan |
| Ford | F-150 RAPTOR | USA |
| McLaren | McLaren 570S | Italy |
| Ferrari | Ferrari 488 Spider | Italy |
| McLaren | McLaren 570S | British |
| Lamborghini | Lamborghini Veneno | Italy |
| Mercedes-Benz | Mercedes-AMG GT R | Germany |
| Rolls Royce | Rolls-Royce Phantom | Germany |
| Nissan | Nissan 370Z | Japan |
| Porsche | 718 Boxster | Germany |
| Tesla | Tesla Roadster | USA |
| Mazda | MAZDA6 | Japan |

Knowledge Assessment

| | |
|------------------------|--|
| Qualification | National Vocational Certificate Level 02 - Artificial Intelligence Data Technician |
| Competency Standard(s) | <ul style="list-style-type: none"> Use of Spreadsheet Use Multimedia Processing Pre-Process Data |
| Candidate Details | Name: Registration/Roll Number: Candidate Signature:..... |
| Assessment Outcome | <div style="display: flex; justify-content: space-between;"> COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> </div> Name of the Assessor: Assessor's code: Signature of the Assessor: |

Candidate's response is not required to be identical, but similar concepts and/or keywords must be used. Oral questioning may be used to clarify candidate understanding of topic and its application.

| Questions (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application) | | Satisfactory | Not Satisfactory |
|---|---|--------------|------------------|
| 1. | Explain Spreadsheet and its Basics. | | |
| | Candidate's response | | |
| 2. | Summarize filtering in spreadsheet. | | |
| | | | |
| 3. | Explain pivot tables. | | |
| | | | |
| 4. | Identify the tool used for plotting data. | | |
| | | | |
| 5. | Define concatenation? | | |
| | | | |
| 6. | List the data formats available in Excel? | | |

| | | | |
|-----|--|--|--|
| | | | |
| 7. | Name the different types of charts? | | |
| | | | |
| 8. | Write five useful functions of spreadsheets? | | |
| | | | |
| 9. | Summarize how to sum up the rows and column number in the Excel sheet? | | |
| | | | |
| 10. | Outline how to add a new Excel worksheet? | | |
| | | | |
| 11. | List any three video file formats? | | |
| | | | |
| 12. | State any three audio file formats? | | |
| | | | |
| 13. | Recall any three image file formats? | | |
| | | | |
| 14. | Define resolution? | | |
| | | | |
| 15. | Describe bit rate? | | |
| | | | |
| 16. | Explain noise in an audio file? | | |
| | | | |
| 17. | Summarize what a frame is in the context of a video? | | |
| | | | |
| 18. | State the full form of OCR | | |
| | | | |
| 19. | Recall that images are made up of individual pixels, what are the pixels made up of? | | |
| | | | |
| 20. | Identify whether changing a video from one format to another, can result in a change of size | | |

| | | | |
|-----|---|--|--|
| | | | |
| 21. | Explain the purpose of bounding boxes | | |
| | | | |
| 22. | Describe the reason noise is added to video or audio files? | | |
| | | | |
| 23. | Define frame rate? | | |
| | | | |
| 24. | Explain is data annotation in the context of images and videos | | |
| | | | |
| 25. | Define timestamp? | | |
| | | | |
| 26. | List the three ways to label audio data | | |
| | | | |
| 27. | Name any three video labelling tools | | |
| | | | |
| 28. | Explain why timestamps are not used with images | | |
| | | | |
| 29. | Contrast labeling videos using noise to labeling video frames with bounding box | | |
| | | | |
| 30. | Define transcript | | |
| | | | |

