Categorise which type of NLP application applies for each of the following use-cases:

a. A model that allocates which mail folder an email should be sent to (work, friends, promotions, important), like Gmail's inbox tabs.
Text classification: for instance identifying the sender, keywords within an email then using machine learning to be able to predict what the most likeliest email type it is and then moves the email into an appropriate folder based on this.

Sentiment analysis: may also be involved to try and analyse the motives behind an email received for example if it's trying to direct you to a website to buy stuff, number of embedded images etc.

b. A model that helps decide what grade to award to an essay question. This can be used by a university professor who grades a lot of classes or essay competitions.
Automatic summarisation: May assist the professor with shortening the essays to a more condensed/summarised form which could be quicker and easier for them to ascertain whether the student has covered the main subject areas, come to logical conclusions etc.

Semantic similarity: Could be used to compare students answers to a bank/model of known levels of answers i.e. if students answer is most similar to a bank of A grade answers vs C grade answers.

c. A model that provides assistive technology for doctors to provide their diagnosis. Remember, doctors ask questions, so the model will use the patients' answers to provide probable diagnosis for the doctor to weigh and make decisions.
Semantic similarity: Assuming doctor is able to input the patients symptoms, relevant characteristics etc into a system there may be a way to compare these inputs to a database of illnesses/conditions and output suggested diagnoses based on a high enough similarity value.

Question answering: System built to accept NLP inputs by text/voice then linked to databases or machine learning algorithms with it outputting suggested diagnoses based on this.