1-How do I trigger a Prometheus alert?

By defining conditions which are PromQL expressions

2-What is the difference between node exporter and MySQL exporter?

Node Exporter: enables Prometheus to pull metrics from Linux instances listens on port 9100

MYSQL Exporter: enables Prometheus to pull metrics from MySQL database whether it created on Linux or other type instance and listens on port 9104

3-what is the maximum retention period to save data in Prometheus and how to increase it?

By default the retention is configured to 15 days and for the maximum period it depends on the availability of storage resources

To change the retention period:

- Add
  ARGS="--storage.tsdb.retention.time=60d"
  to -> /etc/default/prometheus

4-What are the different PromQL data types available in Prometheus Expression language?

Scalars: it does not have labels just numbers

Instant vectors: Instant vectors can be queries simply by identifying the metric name.

Range vectors: select from a range within the instant that instant vectors select

5-How To calculate the average request duration over the last 5 minutes from a histogram?

prometheus_http_request_duration_seconds_sum/prometheus_http_request_duration_seconds_count

6-What is Thanos Prometheus?

Thanos is a set of components that can be composed into a highly available Prometheus setup with long term storage capabilities.

7-what is promtool and how I can use it?

Tooling for Prometheus monitoring through CLI

Use it in the CLI by writing -> promtool --options

8-What types of Monitoring can be done via Grafana?

It provides a better GUI experience of Prometheus metrics

9-Can we see different Servers CPU comparison in Grafana

Yes we can