

# EXERCISES

## The tapered roller bearing

- 1. As is typical of roller bearings, tapered roller bearings focus a combination of radial and single-direction axial loads into 1 central rotational axis.**
  - a) Correct
  - b) Incorrect
- 2. What is the contact angle for tapered roller bearings?**
  - a)  $12^\circ$
  - b)  $45^\circ$
  - c) It varies
  - d)  $3^\circ$
- 3. Which statements apply to tapered roller bearings?**
  - a) They have line contact
  - b) A purely radial load can safely act on the bearing
  - c) The cages are always made of sheet steel
  - d) They can support high loads
  - e) They are usually used in pairs
- 4. What are the size standards for tapered roller bearings?**
  - a) Metric dimension
  - b) K-series
  - c) Custom dimension
  - d) J-series
- 5. What are the disadvantages of tapered roller bearings?**
  - a) Only sheet steel cages can be installed, which limits the load capacity
  - b) Bearing clearance and preload cannot be freely adjusted
  - c) They require more lubrication than other types of bearings because they are exposed to enormously high friction
  - d) Assembly and handling are complicated and is therefore more expensive than with other bearings
  - e) They have lower limiting speeds than cylindrical roller bearings
- 6. Why is crowning used in tapered roller bearings?**
  - a) To reduce the weight
  - b) The aim is to harden the rolling elements to make them more resilient
  - c) To minimise stresses in the edge area
  - d) To ensure that rolling elements are loaded in a relatively balanced manner despite skewing
- 7. What advantages can multi-row tapered roller bearings bring compared to single row?**
  - a) An easier assembly
  - b) Higher load capacity
  - c) The ability to absorb forces in both axial directions
  - d) Less frictional resistance
- 8. What are four-row tapered roller bearings made of?**
  - a) Two double-row inner rings and two double-row outer rings
  - b) Four double-row inner rings and four double-row outer rings
  - c) Four single-row inner rings and four single-row outer rings
  - d) Four inner rings and four outer rings