SOUTH WEST REGIONAL MOCK EXAMINATION
TECHNICAL EDUCATION

The Teachers' Resource Unit (TRU) in collaboration with the Subject Teachers' Association (STA)	**Subject code** **7130**	**Paper number** **1**
SOUTH WEST REGIONAL MOCK EXAMINATION	**Subject title** **CHASSIS SYSTEMS AND TRANSMISSION**	
CANDIDATE NAME ..... CANDIDATE NUMBER ..... CENTRE NUMBER		
ADVANCED LEVEL	**DATE** **18/03/2024**	

Time Allowed: One hour thirty minutes

INSTRUCTIONS TO CANDIDATES:

1. USE A SOFT HB PENCIL THROUGHOUT THIS EXAMINATION.
2. DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
   Before the Examination begins:
   Check that this question booklet is headed "Advanced Level – 7130 Chassis Systems and Transmission, Paper 1".
3. Insert the information required in the spaces provided above.
4. Without opening the booklet, pull out the answer sheet carefully from inside the front cover of this booklet. Take care that you do not crease or fold the answer sheet or make any marks on it other than those asked for in these instructions.
5. Insert the information required in the spaces provided on the answer sheet using your HB pencil:
   Candidate Name, Centre Number, Candidate Number, Subject Code Number and Paper Number.
   How to answer questions in this examination:
6. Answer ALL the 50 questions in this examination. All questions carry equal marks.
7. Non-programmable calculators are allowed.
8. For each question there are four suggested answers, A, B, C, and D. Decide which answer is correct. Find the number of the question on the Answer sheet and draw a horizontal line across the letter to join the square brackets for the answer you have chosen. For example, if C is your correct answer, mark C as shown below:

   [A] [B] [C] [D]

9. Mark only one answer for each question. If you mark more than one answer, you will score zero for that question. If you change your mind about an answer, erase the first mark carefully, and then mark your new answer.
10. Avoid spending much time on any question. If you find a question difficult, move to the next question. You can come back to this question later.
11. Do all rough work in this booklet using, where necessary, the blank spaces in the question booklet.
12. Mobile phones are **NOT ALLOWED** in the examination room.
13. You must not take this booklet and answer sheet out of the examination room. All question booklets and answer sheets will be collected at the end of the examination

1. The unsprung mass in a vehicle system is mainly composed of

A	the frame assembly
B	gear box and propeller shaft
C	axle and the parts attached to it
D	engine and associated parts

2. The sun gear in the planetary gear system meshes with the

A	Pinion cage
B	Ring gear
C	Clutch gear
D	Planet gear

3. Identify the type of leaf spring in figure 1 below;

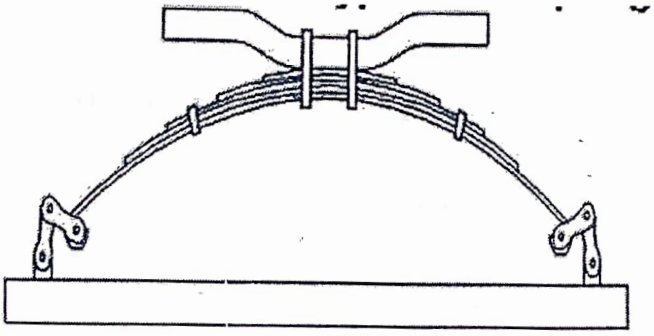

Figure 1

A	Quarter elliptical spring
B	Transverse spring
C	Semi elliptical spring
D	Full elliptical spring

4. In the torque converter, oil leaving the turbine is changed into a helping direction by

A	Pump vanes
B	Stator vanes
C	Turbine vanes
D	Free wheel

5. The centre part of a typical universal joint is called the

A	Grunion TRUNION
B	Joint
C	Bearing
D	Spider

6. What is the possible cause of gear slip?

A	Wrong selection gear shift lever
B	Excessive end float of gear
C	Wrong clutch engagement
D	Worn-out clutch plate

7. What is the servicing procedure carried out in the wheel shown in figure 2 below;

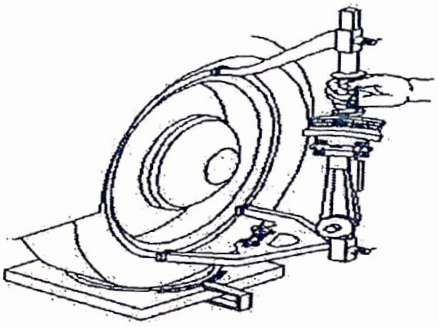

Figure 2

A	Checking camber angle
B	Checking castor angle
C	Checking kingpin inclination
D	Checking included angle

8. Two advantages of using helical gears rather than spur gears in a transmission are

A	High strength and low cost
B	High strength and less end thrust
C	Low noise level and high strength
D	Low noise level and economy

9. In a single planetary gear set, the output member to increase torque is always the

A	Sun gear
B	Ring gear
C	Planet carrier
D	Epicyclical gear

10. Identify the type of clutch in figure 3 below;

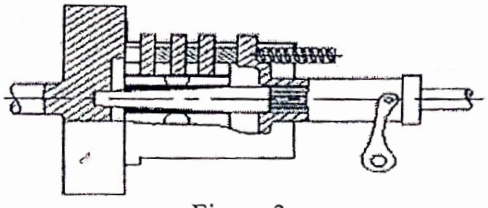

Figure 3

A	Cone clutch
B	Single plate clutch with coil spring
C	Diaphragm clutch
D	Multi plate dry weight clutch

11. What causes noisy gear box in neutral position?

A	Synchronizing unit stuck
B	Bearing worn out or dry
C	Synchronizer defective
D	Synchronizer worn-out

12. The axle bevel gears in the differential mesh with the

A	Pinion gears
B	Ring gear
C	Drive gear
D	Main gear

13. What is the name of part 'X' as in air suspension system?

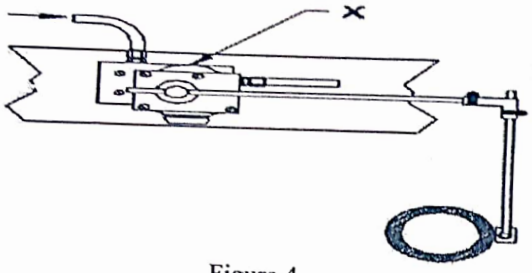

Figure 4

A	Air bag
B	Height control valve
C	Vehicle frame
D	Axle

14. Identify the component in figure 5

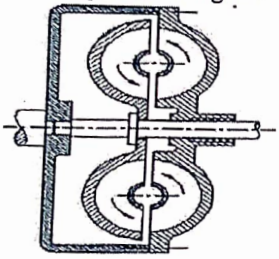

Figure 5

A	Single plate clutch
B	Fluid coupling
C	Dog clutch
D	Centrifugal clutch

15. Identify the type independent suspension system shown in figure 6 below

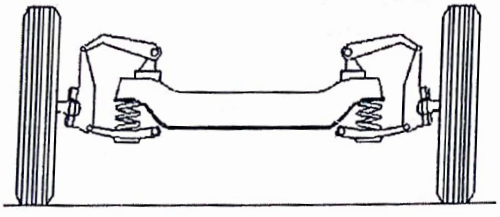

Figure 6

A	Coil spring suspension
B	Torsion bar suspension
C	Air type suspension
D	Strut type suspension

16. What is the effect of weak suspension ?

A	Directional instability of vehicle
B	Carrying excessive payload of vehicle
C	Unequal weight distribution of weight
D	Vibration damping is more effective

17. The parking brake generally acts on

A	Front wheels
B	Rear wheels
C	Front and rear wheels
D	Splined wheels

18. The central gear of an epicyclical gear set is called a

A	Ring gear
B	Sun gear
C	Planet gear
D	Internal gear

19. It is the side to side movement of the front wheels relative to the vertical axis.

A	Yaw
B	Roll
C	Pitch
D	Bounce

20. What is the advantage of mechanical actuated type clutches?

A	Less maintenance and repair
B	Less pedal effort
C	Smooth functioning
D	Easy to operate

21. In a hydraulic power steering system, the power steering pump is driven by a

A	Belt driven by camshaft
B	Chain driven by crankshaft
C	Belt driven by drive-shaft
D	Belt driven by crankshaft

22. The component of the torque converter that allows multiplication of torque is the

A	Turbine
B	Impeller
C	Pump
D	Stator

23. CVT stands for

A	Common Variable Transmission
B	Central Variable Transmission
C	Continuously Variable Transmission
D	Commanded Variable Transmission

35. Which angle helps in self centering of wheels after negotiating a turn?

A	Castor angle
B	King pin inclination
C	Camber angle
D	Included angle

36. If brake wheels get locked before the vehicle stops the wheels are said to be

A	Slipping
B	Sliding
C	Skidding
D	Rubbing

37. If the pedal of hydraulically operated brake is spongy, it indicates that the

A	system contains air
B	shoe clearance is excessive
C	brake fluid should be change
D	system is in a good condition

38. Suspension springs are made of

A	Mild steel
B	Carbon steel
C	High speed steel
D	Spring steel

39. The condition of refrigerant after passing through the condenser in a vapour compression system is

A	Saturated liquid
B	Wet vapour
C	Dry saturated vapour
D	Superheated vapour

40. The condition when the vehicle will try to move away from its normal direction, and to keep it on the right path there is need to steer a little is

A	Understeer
B	Oversteer
C	Reversible-steer
D	Irreversible-steer

41. During high gear in transmission, the main shaft turns at the same speed as the

A	Idle shaft
B	Counter shaft
C	Clutch shaft
D	Output shaft

42. The steering arms on both wheels are connected to the drag link by the

A	Drop arm
B	Steering column
C	Tie rod
D	Single column

43. The overdrive is located between

A	Transmission and the propeller shaft
B	Planetary gears and clutch
C	Transmission and clutch
D	Clutch and gearbox

44. Identify the type of shock absorber shown in figure 10 below;

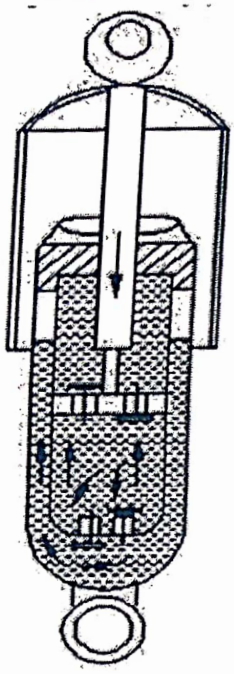

Figure 10

A	Vane type
B	Piston type
C	Telescopic type
D	Mechanical type

45. Hard gear shifting is rectified by

A	Lubricating the unit
B	Checking and realigning
C	Adjusting clutch pedal free play
D	Re- installing spring correctly

46. Basic factors affecting gear selection

A	Vehicle load and engine speed
B	Vehicle speed and engine load
C	Vehicle load and road condition
D	Engine speed and road condition