653DN(ML)

QUESTION BOOKLET CODE	B

Government of India
Department of Space
LIQUID PROPULSION SYSTEMS CENTRE
Valiamala PO, Thiruvananthapuram - 695 547

WRITTEN TEST FOR SELECTION TO THE POST OF
DRAUGHTSMAN 'B' (MECHANICAL)

Date: 30.10.2016

Maximum Marks: 300

Time: 2 hours

Name of the Candidate:

Roll No.:

Instructions to the Candidates

1. Candidates should read carefully the instructions in the Question booklet and OMR Answer Sheet before start answering.
2. You have been called for the written test based on the data furnished by you in the on-line application. If you have wrongly entered in the application or you do not possess the required qualification as per our advertisement, your candidature will be rejected.
3. You should sign the Admit Card/Photograph only in the presence of the invigilator in the Examination Hall.
4. The question paper is in the form of Question Booklet with 75 questions. A separate OMR sheet is provided for answering the Questions.
5. **Question Booklet series code (A/B/C/D/E) printed on the right hand top corner should be written in the OMR answer sheet in the place provided.**
6. Enter your Name and Roll Number in the Question Booklet.
7. All entries in the OMR answer sheet should be with blue/black ball point pen only.

P.T.O

8. The written test will be of objective type based on the qualification prescribed for the post with four answers indicated, of which only one will be unambiguously correct.

9. You have to select the right answer by marking the corresponding oval on the OMR answer sheet by blue/black ball point pen as per the instructions given in the OMR answer sheet.

10. All questions carry **four** marks each, **zero** marks for no answer and **one negative** mark for a wrong answer.

11. Multiple answers for a question will be regarded as a wrong answer.

12. Marking in OMR may be done with utmost care. No spare OMR sheet will be provided.

13. Computers, Calculators, mobile phones, reference books, logarithm table, electronic gadgets etc. will not be allowed inside the Examination Hall.

14. Space available in the Question Booklet can be used for rough work.

15. **On completion of the test, tear the OMR answer sheet along the perforation mark at the top and hand over the original OMR answer sheet to the invigilator and retain the duplicate copy with you.**

16. Candidates are not permitted to leave the Examination Hall during the first one and a half hour of the examination.

17. Candidates leaving the examination hall after 1150 hrs will be allowed to retain the Question Booklet.

18. After the Examination, candidates should hand over OMR Answer Sheet and Admit Card to the Invigilator.

B

653DN(ML)

DRAUGHTSMAN 'B' (MECHANICAL)

1. Among the following which is magnetic material
   a. Iron b. Copper c. Tin d. Aluminium

2. Density of materials is calculated using the formula
   a. volume/mass b. mass/volume
   c. mass X volume d. None of the above

3. Recoil of gun is explained by
   a. First law of motion
   b. Second law of motion
   c. Third law of motion
   d. Fourth law of motion

4. Speed and velocity is same when the body is travelling in
   a. Circular path
   b. Curved path
   c. Straight line path
   d. None of the above

5. If the velocity of a body is changed from 10 m/s to 20 m/s in 5 sec the acceleration is
   a. 5 m/sec^2 b. 10 m/sec^2 c. 50 m/sec^2 d. 2 m/sec^2

6. 30 km/ hour speed is equal to _____ m/sec
   a. 500 b. 50 c. 8.33 d. 4.33

7. Initial velocity of an object is 5 m/s and it is moving with a constant acceleration of 10 m/s^2 its velocity after 5 sec. is
   a. 20 m/s b. 35 m/s c. 50 m/s d. 55 m/s

8. Frictional force is proportional to
   a. Area of contact b. Normal reaction
   c. Mass d. Acceleration force

9. When an object is freely falling from a height its
   a. Kinetic Energy is converted to Potential Energy
   b. Potential Energy is converted to Kinetic Energy
   c. Kinetic Energy is reduced to zero
   d. Potential energy is reduced to zero

10. Modulus of elasticity is
    a. Stress/strain b. Strain/stress c. Stress – strain d. Stress X strain

11. Absolute pressure(greater than atmospheric pressure) can be calculated using the formula
    a. Gauge pressure – atmospheric pressure
    b. Gauge pressure + atmospheric pressure
    c. atmospheric pressure –Gauge pressure
    d. none of the above

12. Unit of pressure is
    a. Newton b. Pascal c. Kilogram d. Gauge

13. Area of A1 sheet is
    a. 1 m^2 b. 0.5 m^2 c. 1.5 m^2 d. 2 m^2

14. Which is a closed curve
    a. Parabola b. Hyperbola c. Ellipse d. None of the above

15. When a cone is cut by a plane parallel to the axis we get
    a. Circle b. Parabola c. Ellipse d. Hyperbola

16. In first angle projection top view is drawn
    a. Below the front view
    b. Above the front view
    c. Below the side view
    d. Above the side view

17. A point is ***50 mm*** above the horizontal plane and ***20 mm*** in front of the vertical plane then the point is in
    a. In first quadrant
    b. In second quadrant
    c. In third quadrant
    d. In fourth quadrant

18. For the perspective view the projectors are
    a. Parallel to each other
    b. Perpendicular to the plane of projection
    c. Originated from one point
    d. Originating from infinity

19. True length can be measured in
    a. Oblique projection
    b. Isometric projection
    c. Orthographic projection
    d. Perspective projection

20. The lead of a double start thread of pitch ***p***

a. 1 ***p*** b. 2 ***p*** c. 4 ***p*** d. 0.5 ***p***

21. Standard height of a hexagonal nut of pitch dia***d*** is

a. 0.8 ***d*** b. 1 ***d*** c. 1.2 ***d*** d. 1.5 ***d***

22. Among the following which is a permanent fastener

a. Nut & bolt b. Screw c. Rivet d. None of the above

23. Standard edge distance for a rivet(of diameter ***d***) joint is

a. 0.5 ***d*** b. 0.9 ***d*** c. 1 ***d*** d. 1.5 ***d***

24. In chain dimensioning the total length is

a. Given at the end
b. Given as separate dimension line
c. Given as reference
d. None of the above

25. Which one is not a standard scale

a. 1:1 b. 1:2.5 c. 1:4 d. 1:10

26. Bilateral tolerance is having basic dimension

a. Equal to upper limit
b. Equal to lower limit
c. Between upper and lower limits
d. Above upper limit

27. Which is the correct method of axis marking

a.  b.  c.  d. 

28. EBW means

a. Electron Beam Welding
b. Electron Beam Wiring
c. Electron Bevel Welding
d. Electron Beam Working

29. In Interference fit, which is the correct statement

a. Lower limit of shaft dia is less than lower limit of hole dia
b. Upper limit of shaft dia is more than lower limit of hole dia
c. Lower limit of shaft dia is more than upper limit of hole dia
d. Upper limit of shaft dia is less than lower limit of hole dia

30. PCD of 8 nos. dia 6 equi spaced holes on a flange is 50 mm what is the angle between two adjacent holes

a. 45 deg. b. 60 deg. c. 90 deg d. 48 deg.

31. True length of a line inclined to HP and parallel to VP is obtained in

a. Top view b. Front view c. Side view d. None of the above

32. The developed view of a tetrahedron is

a. Tetrahedron b. Square c. Triangle d. Rectangle

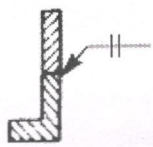
33. The clearance in close running fit is _____ than/to that of sliding fit

a. More b. Less c. Equal d. Opposite

34. Welded joints are

a. Permanent joint b. Temporary joint
c. Semi permanent joint d. Loose joint

35. The weld symbol given in the right side means



a. Square butt weld
b. Half butt weld
c. Double Fillet weld
d. Chain weld

36. The geometrical tolerance for cylindricity is

a.  b.  c.  d. 

37. H7-g6 represents

a. Clearance fit b. Interference fit
c. Transition fit d. None of the above

38. schedule pipe is specified by

a. ID and thickness b. ID alone
c. OD and thickness d. OD alone

39. To connect or branch pipes at right angle which fitting is not used

a. Elbow b. T Joint c. Union joint d. Bend

40. Which machining process can give best surface finish

a. Lapping b. Milling c. Polishing d. Shaping

41. In AutoCAD function key F8 is for
    a. SNAP mode on and off
    b. Ortho mode on and off
    c. Command mode on and off
    d. Grid mode on and off

42. In Auto CAD mass properties gives _____ for a region
    a. Volume b. Mass c. Area d. None of the above

43. @ parameter in AutoCAD is used for specifying
    a. Incremental lengths b. Origin
    c. True length d. Operating point

44. The distance across the corners of a hexagonal nut is
    a. 1.5d b. 2d c. 2.5d d. 3d

45. The angle of a ACME thread is
    a. 25 deg. b. 29 deg. c. 32 deg. d. 60 deg.

46. In pipe fitting MTA stands for
    a. Maximum Thread Available
    b. Minimum Thread Available
    c. Maximum Thickness Available
    d. Male Thread Adaptor

47. Hatching lines are drawn at an angle of _____ to the axis or to the main outline of the sections.
    a. 60° b. 45° c. 30° d. 50°

48. Honing process produces the tolerance grade (IT)_____.
    a. 10 b. 15 c. 0 d. 6

49. Surface flatness is measured by _____.
    a. Micrometer b. Feeler gauge
    c. Optical flat d. Vernier

50. If the representative factor is 10 , the true length of line measuring 50mm on the drawing is
    a. 500 mm b. 5mm c. 50 mm d. 500 cm

51. Symbol for profile tolerance of a surface is
    a.   b)  c)  d) 

52. Basic hole has
a. Upper deviation zero
b) Lower deviation zero
c. Lower as well as upper deviation zero
d) None of the above

53. Identify which line gives true length in plane
a. Line perpendicular to Horizontal plane
b. Line parallel to Vertical plane and inclined to Horizontal plane
c. Line parallel to Horizontal plane and inclined to vertical plane
d. Line inclined to both Horizontal and Vertical planes.

54. Number of edges of a hexagonal pyramid is
a. 18 b. 12 c. 20 d . 6

55. To cut 30 mm internal square thread with a pitch of 2.5 mm, the core diameter should be
a. 25mm b.30.0 mm c. 27.5 mm d. 32.5 mm

56. In an assembly, shafts of size $25\ ^{+0.04}_{+0.01}$ mm mate with holes of size $25\ ^{+0.03}_{+0.02}$ mm. Maximum interference that can occur in the assembly is
a. 0.02 mm b. 0.03 mm c. 0.01 mm d. 0.04 mm

57. A bolt of M 24 x 2 means that
a. The pitch of the thread is 24 mm and depth is 2 mm
b. Cross- sectional area of the threads is 24 mm^2
c. The nominal diameter of bolt is 24 mm and pitch is 2 mm
d. The effective diameter of bolt is 24 mm and there are 2 threads per cm

58. What is the type of fit for the dimension 20 H7/g6 ie 20+0.00 / +0.021 and 20 -0.007 / - 0.0020 mm ?
a. Clearance
b. Transition
c. Interference
d. Heavy interference

59. The smallest unit of an angle is
a. Degree b. Minute c. Second d. Radian

60. The minimum measurement from steel rule is
a. 0.05mm b. 0.1mm c. 0.5mm d. 0.2mm

61. One micron is _____ mm
a. 0.1 b. 0.01 c. 0.001 d. 0.000001

62. Unit of torque is
a. m/s b. N-m c. N/mm^2 d. kg/m^3

63. 20% of a number is 25 then the number is
a. 100 b. 45 c. 125 d. 150

64. $10X + 30 = 75$: then value of X is

a. 4.5 b. 5.5 c. 6.5 d. 7.5

65. $6X + 4Y = 26$ and $5X + 3Y = 20$ then value of X and Y are

a. 3 and 2 b. 4 and 0 c. 1 and 5 d. 5 and 5

66. Volume of a cylinder of radius ***r*** and height ***h*** is

a. πrh b. πr^2h c. πr^2h^2 d. πhr^2

67. Volume of a cube of side 6 cm is

a. 36 cm^3 b. 216 cm^2 c. 36 cm^2 d. 216 cm^3

68. Distance covered by an athlete in two rounds if the track is circular with radius 50 m.

a. 314 m b. 7850 m c. 628 m d. 400 m

69. A solid having 4 faces

a. Cube b. Prism c. Tetrahedron d. Octahedron

70. When observed from the top of a tower of 100 m height a car on the ground is seen at an angle of declination of 30 deg. Distance of the car from the base of the tower is

a. 173.2 m b. 100 m c. 50 m d. 86.6 m

71. Surface area of a sphere of radius 10 cm is

a. 942 cm^2 b. 628 cm^2 c. 314 cm^2 d. 1256 cm^2

72. Density of steel is in the range of

a. 4 – 5 g/cc b. 5 – 6 g/cc c. 6– 7 g/cc d. 7– 8 g/cc

73. Stainless steel gets its property (stainless) due to the presence of

a. Copper b. Nickel c. Carbon d. Chromium

74. Bronze is an alloy of

a. Copper, Tin , Zinc b. Copper, Lead , Zinc

c. Copper, Lead , Tin d. Copper, Tin , Iron

75. Which is a ferrous alloy:

a. Bronze b. Brass c. Steel d. None of the above

****

Space for rough work