

Academic Challenge 2023

Topic Distribution – Engineering Graphics

<i>Topic</i>	<i>Regional</i>	<i>Sectional</i>	<i>State</i>
Written Questions – Some With Illustrations			
The Drafting Field (Terms, Equipment, ASME standards...)	1	1	1
Units/Measuring/Scales	2	2	2
Geometric Construction	3	2	2
Orthographic Projection Theory and Spatial Visualization	4	4	3
Pictorial Drawings	1	1	1
Sectional Views	3	2	2
Auxiliary Views	1	1	1
CAD (Non-software specific 2D and 3D)	2	2	2
Manufacturing Processes	1	1	1
Threads and Fasteners	2	2	2
Dimensioning	3	3	3
Tolerancing	1	2	2
Developments and Intersections	-	1	1
Specialized Applications (Welding/Piping/Electrical...)	-	-	1
Visual Problems and Spatial Visualization			
Isometric Comprehension Problems (Sketch & Count)	2	2	2
Missing Line Problems (Sketch & Count)	2	2	2
Pictorial Visualization Problems	4	4	4
Missing View Visualization Problems	4	4	4
Section View Visualization Problems	4	4	4
Total	40	40	40

Bibliography / Reference List

Engineering Graphics

- Bertoline, G., Wiebe, E., Ross, W., and Hartman, N. *Fundamentals of Solid Modeling and Graphics Communications, 7th Ed.* McGraw-Hill, 2018. ISBN-13: 978-0073375397
- Brown, W., and Brown, R. *Print Reading for Industry, 11th Ed.* Goodheart-Willcox, 2022. ISBN-13: 978-1-64564-672-3
- Dimensioning and Tolerancing: ASME Y14.5M-2018.* The American Society of Mechanical Engineers, 2018.
- Giesecke, F., Mitchell, A., Spencer, H., Hill, I., Dygdon, J., Novak, J., Loving, R., Lockhart, S., Johnson, C., and Goodman, M. *Technical Drawing with Engineering Graphics, 15th Ed.* Peachpit Press, 2016. ISBN-13: 978-0134306414
- Goetsch, D., Chalk, W., Rickman, R., and Chalk, W. *Technical Drawing for Engineering Communication, 7th Ed.* Cengage Learning, 2016. ISBN: 978-1285173016
- Lieu, D., and Sorby, S. *Visualization, Modeling, and Graphics for Engineering Design, 2nd Ed.* Cengage Learning, 2017. ISBN-13: 978-1285172958
- Orthographic and Pictorial Views: ASME Y14.3-2012.* The American Society of Mechanical Engineers, 2013. ISBN-13: 978-0791868508
- Screw Thread Representation: ANSI Y14.6-2001 (Reaffirmed 2007).* The American Society of Mechanical Engineers, 2001. ISBN-10: 0791827445
- Sorby, S., Wysocki, A., and Baartmans, B. *Introduction to 3-D Visualization: An Active Approach.* Cengage Learning, 2003. ISBN-13: 978-1401813895