S4 Visual Arts Practice Paper

S4 | Visual Arts | Time: 75 minutes | Total: 100 marks | 24 questions

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Part 1: Visual Elements and Design Principles (16 marks)

Show all working; give areas in square centimetres.

1. A canvas measures 60 cm by 90 cm. (a) Find the area of the canvas. (b) The main subject covers 40% of the canvas; find the area of the subject.

Answer: (a) 60 x 90 = 5,400 cm^2. (b) 5,400 x 40% = 2,160 cm^2.

2. A digital image is 1200 x 1600 pixels and is printed at 300 dpi. (a) Find the printed width in inches. (b) Find the printed height in inches.

Answer: (a) 1200 / 300 = 4.00 in. (b) 1600 / 300 = 5.33 in.

3. Five repeated motifs run evenly from 8 cm to 64 cm along a mural. (a) Find the spacing between adjacent motifs. (b) If 7 motifs keep the same spacing, find the total length.

Answer: (a) (64 - 8) / (5 - 1) = 14.00 cm. (b) 8 + 14.00 x 6 = 92 cm.

4. A picture plane is 90 cm high and the horizon sits at 0.618 of the height measured from the top. (a) Find the distance from the top. (b) Find the height of the lower part.

Answer: (a) 90 x 0.618 = 55.62 cm. (b) 90 - 55.62 = 34.38 cm.

Part 2: Colour Theory and Mixing Ratios (16 marks)

Give mixed volumes as whole millilitres and percentages to two decimal places.

5. White and blue paint are mixed in the ratio 3 : 2 to give 250 ml. (a) Find the volume of blue paint. (b) Find the volume of white paint.

Answer: (a) 5 parts in total; 250 x 2/5 = 100 ml. (b) 250 x 3/5 = 150 ml.

6. A red has a hue angle of 0 degrees. (a) Find the hue angle of its complementary colour on the wheel. (b) If saturation falls from 60% to 45%, find the percentage drop.

Answer: (a) (0 + 180) mod 360 = 180 degrees (cyan). (b) (60 - 45) / 60 x 100 = 25.00%.

7. Two colours are RGB(200, 100, 50) and RGB(100, 150, 200) and are mixed in equal amounts. (a) Find the resulting RGB value. (b) State whether it reads warm or cool, with a reason.

Answer: (a) R=150, G=125, B=125. (b) The red value 150 exceeds the blue value 125, so the mix reads warm.

8. A tungsten lamp is rated 3000 K and daylight 5500 K. (a) By what percentage is daylight higher? (b) Under the tungsten lamp, should a warm or a cool filter be used to imitate daylight?

Answer: (a) (5500 - 3000) / 3000 x 100 = 83.33%. (b) Tungsten is warm, so a cool (blue) filter is needed to correct white balance.

Part 3: Perspective, Proportion and Composition (16 marks)

Give angles and lengths to two decimal places.

9. An observer whose eyes are 1.5 m high stands 6 m from a wall, with the vanishing point at eye level. Find the angle of depression to the foot of the wall.

Answer: tan(theta) = 1.5 / 6 = 0.25, so theta = 14.04 degrees.

10. A camera of focal length 50 mm photographs a 2 m high wall 4 m away. Using the pinhole model, find the image height in millimetres.

Answer: image height = 2000 x 50 / 4000 = 25.00 mm.

11. A golden rectangle has a short side of 34 cm. (a) Find the long side. (b) Find the ratio of long to short side to three decimal places.

Answer: (a) 34 x 1.618 = 55.01 cm. (b) 55.01 / 34 = 1.618.

12. A picture plane is 45 cm by 60 cm and two horizontal lines follow the rule of thirds. (a) Find their distances from the top edge. (b) Find the distance between the two lines.

Answer: (a) 45 / 3 = 15 cm and 30 cm. (b) 15 cm.

Part 4: Hong Kong and Chinese Visual Arts (16 marks)

Give money in HK dollars and areas in square metres to two decimal places.

13. An ink painting is knocked down at HK$1,200,000 with a 20% buyer premium. (a) Find the premium. (b) Find the total paid by the buyer.

Answer: (a) 1,200,000 x 20% = HK$240,000. (b) 1,200,000 + 240,000 = HK$1,440,000.

14. An exhibition runs 21 days, 8 hours a day, averaging 35 visitors per hour. (a) Find the total attendance. (b) How far is it from the 6,000 visitor target?

Answer: (a) 21 x 8 x 35 = 5,880 visits. (b) 6,000 - 5,880 = 120 visits short.

15. A full sheet of xuan paper measures 138 cm by 69 cm and is mounted with a 5 cm border on all four sides. (a) Find the paper area in square metres. (b) Find the framed area.

Answer: (a) 1.38 x 0.69 = 0.95 m^2. (b) 1.48 x 0.79 = 1.17 m^2.

16. A museum holds 12,000 objects and displays 240 in its permanent galleries. (a) Find the percentage on display. (b) How many objects would 5% represent?

Answer: (a) 240 / 12,000 x 100 = 2.00%. (b) 12,000 x 5% = 600 objects.

Part 5: Western Art Movements and Criticism (16 marks)

Give ratios to three decimal places and years as whole numbers.

17. The Renaissance is usually dated 1400 to 1600. (a) Find the midpoint year. (b) A painting was completed in 1520; how many years is that from the midpoint?

Answer: (a) (1400 + 1600) / 2 = 1500. (b) 1520 - 1500 = 20 years.

18. The first Impressionist exhibition was held in 1874. (a) Which anniversary falls in 2024? (b) If it were restaged every 12 years from 1874, which was the last staging before 2024?

Answer: (a) 2024 - 1874 = 150 years. (b) 1874 + 12 x 12 = 2018 (the next would be 2030).

19. A famous painting measures 77 cm by 53 cm. (a) Find the ratio of the longer to the shorter side. (b) Judge whether it is close to the golden ratio and explain.

Answer: (a) 77 / 53 = 1.453. (b) The golden ratio is 1.618, a gap of about 0.165, so it is not close.

20. A work is estimated at HK$800,000 to HK$1,200,000 and sells for 1.25 times the mid estimate. (a) Find the mid estimate. (b) Find the sale price.

Answer: (a) (800,000 + 1,200,000) / 2 = HK$1,000,000. (b) 1,000,000 x 1.25 = HK$1,250,000.

Part 6: Exhibition Planning and Portfolio (20 marks)

Each question carries 5 marks; show all working and explain any rounding up.

21. Venue hire is $18,000, a 500-copy catalogue costs $12 each, and insurance is $3,500. (a) Find the total cost. (b) With $30 tickets, how many must be sold to break even?

Answer: (a) 18,000 + 6,000 + 3,500 = $27,500. (b) 27,500 / 30 = 916.67, so 917 tickets are needed after rounding up.

22. A portfolio holds 12 works, 3 of them video. (a) Find the percentage that is video. (b) If the portfolio grows to 15 works with still 3 videos, find the new percentage.

Answer: (a) 3 / 12 x 100 = 25.00%. (b) 3 / 15 x 100 = 20.00%.

23. Twenty crates of 12 kg each are shipped at $45 per kilogram. (a) Find the base freight. (b) Find the total freight after a 15% surcharge.

Answer: (a) 20 x 12 x 45 = $10,800. (b) 10,800 x 1.15 = $12,420.

24. Forty-eight works are hung by 3 installers, each hanging 4 works per hour. (a) Find the hours needed. (b) How many extra installers are needed to finish within 3 hours?

Answer: (a) 48 / (3 x 4) = 4 hours. (b) 48 / (4 x 3) = 4 installers, so 1 extra are needed.